City of Hailey

Woodside WRF – UV Installation

Construction Documents
Project Manual – Volume 1

Issued for Bid

October 3, 2022

HDR Project No. 10162649
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DIVISION 00

PROCUREMENT AND CONTRACTING REQUIREMENTS
Owner Name: City of Hailey, Idaho
Facility or Site Name: Woodside WRF
Project Name: UV Installation
Project or Contract Designation: 10162649
Engineer: HDR

Brad Bjerke, PE
License No. 8778

The seal and signature to the left applies to the following Specifications divisions and sections of this project manual:

- Division 01
- Division 02
- Division 03
- Division 40

John Barrutia, Jr., PE
License No. 7051

The seal and signature to the left applies to the following Specifications divisions and sections of this project manual:

- Division 26

Engineer’s seal and signature does not apply to the documents that comprise Division 00, Bidding and Contracting Requirements.

It is a violation of applicable laws and regulations governing professional licensing and registration for any person, unless acting under the direction of the licensed and registered design professional(s) indicated above, to alter in any way the Specifications in this project manual.

END OF SEALS AND SIGNATURES
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ADVERTISEMENT FOR BIDS

City of Hailey, Idaho
Woodside WRF
UV Installation

General Notice

City of Hailey, ID (Owner) is requesting Bids for the construction of the following Project:

Woodside WRF
UV Installation
HDR Project No. 10162649

Bids for the construction of the Project will be received at the Hailey City Hall located at 115 Main Street South, Suite H, Hailey, Idaho 83333, until Thursday, November 17th at 12:00 p.m. local time. At that time the Bids received will be publicly/privately opened and read.

The Project includes the following Work:

The City of Hailey’s Woodside WRF has purchased a Wedeco TAK55 ultraviolet (UV) disinfection system to be installed. The Project will include installation of the UV disinfection system, associated equipment and instrumentation, and modifications to the UV channels.

Bids are requested for the following Contract: Woodside WRF – UV Installation

Obtaining the Bidding Documents

Information and Bidding Documents for the Project can be obtained at the following designated website:

www.haileycityhall.org

Bidding Documents may be downloaded from the designated website. Prospective Bidders are urged to register with the designated website as a Bidding Documents holder, even if Bidding Documents are obtained from a third-party plan room or source other than the designated website in either electronic or paper format. The designated website will be updated periodically with Addenda, lists of registered Bidding Documents holders, reports on the Site, and other information relevant to submitting a Bid for the Project. All official notifications, Addenda, and other Bidding Documents will be offered only through the designated website. Neither Owner nor Engineer will be responsible for Bidding Documents, including Addenda, if any, obtained from sources other than the designated website.

The Issuing Office for the Bidding Documents is:

Hailey City Hall, City of Hailey, ID
115 Main Street South, Suite H, Hailey, Idaho 83333

Prospective Bidders may obtain or examine the Bidding Documents at the Issuing Office on Monday through Thursday between the hours of 9:00 a.m. and 5:00 p.m. local time, or on Friday between the hours of 9:00 a.m. and 12:00 p.m. local time, and may obtain copies of the Bidding Documents from the Issuing Office as described below. Partial sets of Bidding Documents will not be available from the Issuing Office. Neither Owner nor Engineer will be responsible for full or partial sets of Bidding Documents, including Addenda, if any, obtained from sources other than the Issuing Office.

Pre-bid Conference
An optional pre-bid conference for the Project will be held on Wednesday, November 2nd at 1:00 p.m. local time at the Woodside WRF, located at 4297 Glenbrook Drive, Hailey, Idaho 83313. Attendance at the pre-bid conference is encouraged but not required.

Instructions to Bidders

For all further requirements regarding bid submittal, qualifications, procedures, and contract award, refer to the Instructions to Bidders that are included in the Bidding Documents.

Addendums

Addendums will be posted to the City of Hailey’s website.

This Advertisement is issued by:

Owner: City of Hailey, Idaho
By: Brian Yeager
Title: Public Works Director
Date of Advertisement #1: October 26, 2022
Date of Advertisement #2: November 2, 2022
Date of Advertisement #3: November 9, 2022
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ARTICLE 1—DEFINED TERMS

1.01 Terms used in these Instructions to Bidders have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below:

A. Issuing Office—The office from which the Bidding Documents are to be issued, and which registers plan holders.

ARTICLE 2—BIDDING DOCUMENTS

2.01 Bidder shall obtain a complete set of Bidding Requirements and proposed Contract Documents (together, the Bidding Documents). See the Agreement for a list of the Contract Documents. It is Bidder’s responsibility to determine that it is using a complete set of documents in the preparation of a Bid. Bidder assumes sole responsibility for errors or misinterpretations resulting from the use of incomplete documents, by Bidder itself or by its prospective Subcontractors and Suppliers.

2.02 Bidding Documents are made available for the sole purpose of obtaining Bids for completion of the Project and permission to download or distribution of the Bidding Documents does not confer a license or grant permission or authorization for any other use, nor does it grant or confer ownership or any property interest in the Bidding Documents and other documents distributed for the Project. Authorization to download documents, or other distribution, includes the right for Bidding Documents holders to print documents solely for their use, and the use of their prospective Subcontractors and Suppliers, provided the Bidding Documents holder pays all costs associated with printing or reproduction. Paper or other types of printed documents may not be re-sold under any circumstances.

2.03 Owner has established a Bidding Documents Website as indicated in the Advertisement or invitation to bid. Owner recommends that Bidder register as a Bidding Documents holder with the Issuing Office at such website, and obtain a complete set of the Bidding Documents from such website. Bidders may rely that sets of Bidding Documents obtained from the Bidding Documents Website are complete, unless an omission is blatant. Registered Bidding Documents holders will receive Addenda issued by Owner or Issuing Office.

2.04 Bidder may register as a Bidding Documents holder and obtain complete sets of Bidding Documents, in the format stated in the Advertisement or invitation to bid, from the Issuing Office. Bidders may rely that sets of Bidding Documents obtained from the Issuing Office are complete, unless an omission is blatant. Registered Bidding Documents holders will receive Addenda issued by Owner or Issuing Office.

2.05 Plan rooms (including construction information subscription services, and electronic and virtual plan rooms) may distribute the Bidding Documents, or make them available for examination. Those prospective bidders that obtain an electronic (digital) copy of the Bidding Documents from a plan room are encouraged to register as Bidding Documents holders from the Bidding Documents Website or Issuing Office. Owner is not responsible for omissions in Bidding
Documents or other documents obtained from plan rooms or other such sources (such as other prospective bidders), or for a Bidder’s failure to obtain Addenda from a plan room.

2.06 Electronic Documents

A. When the Bidding Requirements indicate that electronic (digital) copies of the Bidding Documents are available, such documents will be made available to prospective Bidders as Electronic Documents in the manner specified.

1. Bidding Documents will be provided in Adobe PDF (Portable Document Format) (.pdf) that is readable by Adobe Acrobat Reader Version [insert version number] or later. It is the intent of the Engineer and Owner that such Electronic Documents are to be exactly representative of the paper copies of the documents. However, because the Owner and Engineer cannot totally control the transmission and receipt of Electronic Documents nor any bidder’s or the Contractor’s means of reproduction of such documents, the Owner and Engineer cannot and do not guarantee that Electronic Documents and reproductions prepared from those versions are identical in every manner to the paper copies.

B. Unless otherwise stated in the Bidding Documents, the Bidder may use and rely upon complete sets of Electronic Documents of the Bidding Documents, described in Paragraph 2.06.A above. However, Bidder assumes all risks associated with differences arising from transmission/receipt of Electronic Documents versions of Bidding Documents and reproductions prepared from those versions and, further, assumes all risks, costs, and responsibility associated with use of the Electronic Documents versions to derive information that is not explicitly contained in paper versions of the documents, and for Bidder’s reliance upon such derived information.

C. After the Contract is awarded, the Owner will provide or direct the Engineer to provide for the use of the Contractor certain documents that were developed by Engineer as part of the Project design process, as Electronic Documents in native file formats as originally prepared by Engineer.

1. Electronic Documents that are available in native file format include:
   a. Project Manual – Volume 1 (Specifications)
   b. Project Manual – Volume 2 (Appendix)
   c. UV Installation Drawings

2. Release of such documents will be solely for the convenience of the Contractor and subject to additional requirements, if any, for such release. No such document is a Contract Document.

3. Unless the Contract Documents explicitly identify that such information will be available to the Successful Bidder (Contractor), nothing herein will create an obligation on the part of the Owner or Engineer to provide or create such information, and the Contractor is not entitled to rely on the availability of such information in the preparation of its Bid or pricing of the Work. In all cases, the Contractor shall take appropriate measures to verify that electronic/digital information provided in Electronic Documents is appropriate and adequate for Contractor’s specific purposes.
4. In no case will Contractor be entitled to additional compensation or time for completion due to any differences between the actual Contract Documents and any related document in native file format.

ARTICLE 3—QUALIFICATIONS OF BIDDERS

3.01 Bidder is to submit the following information with its Bid to demonstrate Bidder’s qualifications to perform the Work:

A. Written evidence establishing its qualifications such as financial data, previous experience, and present commitments.

B. A written statement that Bidder is authorized to do business in the state where the Project is located, or a written certification that Bidder will obtain such authority prior to the Effective Date of the Contract.

C. Bidder’s state (or other) contractor license number, if applicable.

D. Subcontractor and Supplier qualification information.

E. Other required information regarding qualifications.

3.02 A Bidder’s failure to submit required qualification information within the times indicated may disqualify Bidder from receiving an award of the Contract.

3.03 No requirement in this Article 3 to submit information will prejudice the right of Owner to seek additional pertinent information regarding Bidder’s qualifications.

3.04 Bidders shall be experienced in the kind of Work to be performed, shall have the or be able to obtain construction equipment necessary for the Work, and shall possess sufficient capital to properly perform the Work within the time allowed. Bids received from Bidders who have previously failed to complete work within the time required, or who have previously performed similar work in an unsatisfactory manner, may be rejected. A Bid may be rejected if Bidder cannot show and document to Owner’s satisfaction that Bidder has the necessary ability, facilities, equipment, and resources to commence the Work at the time prescribed and thereafter to prosecute and complete the Work at the rate or within the times specified. A Bid may be rejected if Bidder is already obligated for the performance of other work which would delay the commencement, prosecution or completion of the Work.

ARTICLE 4—PRE-BID CONFERENCE

4.01 A non-mandatory pre-bid conference will be held at the time and location indicated in the Advertisement or invitation to bid. Representatives of Owner and Engineer will be present to discuss the Project. Bidders are encouraged to attend and participate in the conference; however, attendance at this conference is not required to submit a Bid.

4.02 Information presented at the pre-bid conference does not alter the Bidding Documents. Owner or Issuing Office will issue Addenda to make any changes to the Bidding Documents that result
from discussions at the pre-bid conference. Information presented, and statements made at the
pre-bid conference will not be binding or legally effective unless incorporated in an Addendum.

ARTICLE 5—SITE AND OTHER AREAS; EXISTING SITE CONDITIONS; EXAMINATION OF SITE; OWNER’S
SAFETY PROGRAM; OTHER WORK AT THE SITE

5.01 Site and Other Areas

A. The Site is identified in the Bidding Documents, including in Specifications Section 01 11 00 –
Summary of Work. By definition, the Site includes rights-of-way, easements, and other lands
furnished by Owner for the use of the Contractor. Any additional lands required for
temporary construction facilities, construction equipment, or storage of materials and
equipment, and any access needed for such additional lands, are to be obtained and paid for
by Contractor.

5.02 Existing Site Conditions

A. Subsurface and Physical Conditions; Hazardous Environmental Conditions

1. The Supplementary Conditions identify the following regarding existing conditions at or
adjacent to the Site:
   a. Those reports of explorations and tests of subsurface conditions at or adjacent to
   the Site that contain Technical Data.
   b. Those drawings known to Owner of existing physical conditions at or adjacent to
   the Site, including those drawings depicting existing surface or subsurface
   structures at or adjacent to the Site (except Underground Facilities), that contain
   Technical Data.
   c. Reports and drawings known to Owner relating to Hazardous Environmental
   Conditions that have been identified at or adjacent to the Site.
   d. Technical Data contained in such reports and drawings.

2. Owner will make copies of reports and drawings referenced above available to any
prospective Bidder on request. These reports and drawings are not part of the Contract
Documents, but the Technical Data contained therein upon whose accuracy Bidder is
entitled to rely, as provided in the General Conditions, has been identified and
established in the Supplementary Conditions. Bidder is responsible for any
interpretation or conclusion Bidder draws from any Technical Data or any other data,
interpretations, opinions, or information contained in such reports or shown or
indicated in such drawings.

3. If the Supplementary Conditions do not identify Technical Data, the default definition of
Technical Data set forth in Article 1 of the General Conditions will apply.

B. Underground Facilities: Underground Facilities are shown or indicated on the Drawings,
pursuant to Paragraph 5.05 of the General Conditions, and not in the drawings referred to in
Paragraph 5.02.A of these Instructions to Bidders. Information and data regarding the
presence or location of Underground Facilities are not intended to be categorized, identified,
or defined as Technical Data.
5.03 Other Site-Related Documents

A. In addition to the documents regarding existing Site conditions referred to in Paragraph 5.02.A of these Instructions to Bidders, the following other documents relating to conditions at or adjacent to the Site are known to Owner and made available to Bidders for reference:

1. Woodside Wastewater Treatment Plant Record Drawings, dated May 15, 2001
2. Solids Handling Improvements Record Drawings, dated February 27, 2017

Owner will make copies of these other Site-related documents available to any Bidder on request at the website indicated in 01 11 13 – Advertisement of Bids.

B. Owner has not verified the contents of these other Site-related documents, and Bidder may not rely on the accuracy of any data or information in such documents. Bidder is responsible for any interpretation or conclusion Bidder draws from the other Site-related documents.

C. The other Site-related documents are not part of the Contract Documents.

D. Bidders are encouraged to review the other Site-related documents, but Bidders will not be held accountable for any data or information in such documents. The requirement to review and take responsibility for documentary Site information is limited to information in (1) the Contract Documents and (2) the Technical Data.

E. No other Site-related documents are available.

5.04 Site Visit and Testing by Bidders

A. Bidder is required to visit the Site and conduct a thorough visual examination of the Site and adjacent areas. During the visit the Bidder must not disturb any ongoing operations at the Site.

B. A Site visit is scheduled following the pre-bid conference. Maps, directions, or GPS coordinates to the Site, when the Site is remote from the pre-bid conference location, will be available at the pre-bid conference.

C. A Site visit is scheduled for Wednesday, November 2nd, 2022 at 1:00 p.m. local time at the Woodside WRF, located at 4297 Glenbrook Drive, Hailey, Idaho 83313. The location of the Site is indicated in the Bidding Documents, including in Specifications Section 01 11 00 – Summary of Work.

D. Bidders visiting the Site are required to: (1) arrange their own transportation to the Site; and (2) each Bidder visiting the Site is responsible for providing and using its own personal protective equipment appropriate for the Site and conditions, and in accordance with posted requirements, if any. At minimum, each visitor to the Site should have an appropriate hardhat, steel-toed boots, eye and hearing protection (other than ordinary eyewear), and a high-visibility reflective safety vest. Comply with Paragraph 5.05 of these Instructions to Bidders.

E. All access to the Site, other than during a regularly scheduled Site visit, must be coordinated through the following Owner or Engineer contact for visiting the Site: Brian Yeager, Public Works Director, phone: 208-788-9830, ext. 1, email: brian.yeager@haileycityhall.org. Bidder must conduct the required Site visit during normal working hours, Mondays through Fridays.

F. Bidder is not required to conduct any subsurface testing, or exhaustive investigations of Site conditions.
G. On request, and to the extent Owner has control over the Site, and schedule permitting, the Owner will provide Bidder general access to the Site to conduct such additional examinations, investigations, explorations, tests, and studies as Bidder deems necessary for preparing and submitting a successful Bid. Owner will not have any obligation to grant such access if doing so is not practical because of existing operations, security or safety concerns, or restraints on Owner’s authority regarding the Site. Bidder is responsible for establishing access needed to reach specific selected test sites.

H. Bidder must comply with Laws and Regulations regarding excavation and location of utilities, obtain necessary permits, and comply with all terms and conditions established by Owner or by property owners or other entities controlling the Site with respect to schedule, access, existing operations, security, liability insurance, and applicable safety programs.

I. Bidder must fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies.

5.05 Owner’s Safety Program

A. Site visits and work at the Site may be governed by an Owner safety program. If an Owner safety program exists, it will be indicated in the Supplementary Conditions. Where the Bidding Documents indicate an Owner’s safety program, visitors to the Site during the bidding phase and at other times shall comply with Owner’s safety programs.

5.06 Other Work at the Site

A. Reference is made to Specifications Section 01 11 00 – Summary of Work, for the identification of the general nature of other work of which Owner is aware (if any) that is to be performed at the Site by Owner or others (such as utilities and other prime contractors) and relates to the Work contemplated by these Bidding Documents. If Owner is party to a written contract for such other work, then on request, Owner will provide to each Bidder access to examine such contracts (other than portions thereof related to price and other potentially confidential matters), if any.

ARTICLE 6—BIDDER’S REPRESENTATIONS AND CERTIFICATIONS

6.01 Express Representations and Certifications in Bid Form, Agreement

A. The Bid Form that each Bidder will complete and submit contains express representations regarding the Bidder’s examination of Project documentation, Site visit, and preparation of the Bid, and certifications regarding lack of collusion or fraud in connection with the Bid. Bidder should review these representations and certifications, and assure that Bidder can make the representations and certifications in good faith, before executing and submitting its Bid.

B. If Bidder is awarded the Contract, Successful Bidder (as Contractor) will make similar express representations and certifications when it signs the Agreement.
ARTICLE 7—INTERPRETATIONS AND ADDENDA

7.01 Owner on its own initiative may issue Addenda to clarify, correct, supplement, or change the Bidding Documents.

7.02 Bidder shall submit all questions about the meaning or intent of the Bidding Documents to Engineer in writing. Contact information and submittal procedures for such questions are as follows:
   A. Brian Yeager, Public Works Director
      1. Phone: 208-788-9830, ext. 1
      2. Email: brian.yeager@haileycityhall.org

7.03 Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda delivered to all Bidding Documents holders registered with the Issuing Office. Questions received less than seven days prior to the date for opening of Bids may not be answered.

7.04 Only responses set forth in an Addendum will be binding. Oral and other interpretations or clarifications will be without legal effect. Responses to questions are not part of the Contract Documents unless set forth in an Addendum that expressly modifies or supplements the Bidding Documents.

7.05 Addenda that engineer judges to have a material or significant effect on Bidders’ preparation of pricing and other requirement element of the Bid will be transmitted via Addendum for Bidders’ receipt not less than three days prior to the scheduled date for receipt of the Bids. Clarifications or modifications that Engineer deems will not have a material or substantial effect on the preparation of Bids may be transmitted for Bidders’ receipt later, for receipt prior to the deadline for receipt of Bids.

ARTICLE 8—BID SECURITY

8.01 Required Form and Amount of Bid Security
   A. A Bid must be accompanied by bid security made payable to Owner in an amount of 5 percent of Bidder’s maximum Bid price (determined by adding the base bid and all alternates) and in the form of a bid bond issued by a surety meeting the requirements of Paragraph 6.01 of the General Conditions.
      1. The bid security may be included with the bid in one of the following forms:
         a. Cash;
         b. Cashiers Check made payable to Owner;
         c. Certified Check made payable to Owner; and
         d. Bidder’s bond executed by a qualified surety company, made payable to Owner.
   B. Such bid bond will be issued in the form included in the Bidding Documents.

8.02 Bid Security of Successful Bidder
   A. The Bid security of the apparent Successful Bidder will be retained until Owner awards the Contract to such Bidder, and such Bidder has signed the Contract, furnished the required
Contract security, and met the other conditions of the Notice of Award, whereupon the Successful Bidder’s bid security will be released.

B. If the Successful Bidder fails to sign and deliver the Contract and furnish the required Contract security within the number of days, indicated in Paragraph 20.01 of these Instructions to Bidders, after the Notice of Award, Owner may consider Bidder to be in default, annul the Notice of Award, and the bid security of that Bidder will be forfeited.

C. Upon Successful Bidder’s default:

1. When the bid security is a penal sum bid bond, the entire penal sum amount of the bid bond will be forfeit and due Owner.

2. When the bid security is a damages form of bid bond, to the extent of Owner’s damages will be forfeit and due Owner.

3. If a type of bid security other than a bid bond is allowed and is furnished, the amount that will be forfeit and due Owner will be the same as for the form of bid bond included in the Bidding Documents. Owner will so notify the defaulting Bidder in writing of the annulment and the amount of the forfeiture, with documentation of the amount forfeited.

D. Such forfeiture will be Owner’s exclusive remedy if Bidder defaults.

8.03 Bid Security of Bidders other than the Successful Bidder

A. The bid security of other Bidders that Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of seven days after the Effective Date of the Contract or [61] days after the Bid opening, whereupon bid security furnished by such Bidders will be released.

B. Bid security of other Bidders that Owner believes do not have a reasonable chance of receiving the award will be released within seven days after the bid opening.

C. Release of Bid Security: Owner may release any Bidder’s bid security by returning such bid security to the associated Bidder. When bid security is in the form of a bid bond, Owner may dispose of or destroy the bid bond and so advice the associated Bidder in writing that the bid bond has been released.

ARTICLE 9—CONTRACT TIMES

9.01 The number of days within which, or the dates by which, the Work is to be (a) substantially completed and (b) ready for final payment, and (c) Milestones (if any), are to be achieved are set forth in the Agreement.

9.02 Bidder must set forth in the Bid the time by which Bidder must achieve Substantial Completion, subject to the restrictions established in Paragraph 13.07 of these Instructions to Bidders. Owner will take Bidder’s time commitment regarding Substantial Completion into consideration during the evaluation of Bids, and it will be necessary for the apparent Successful Bidder to satisfy Owner that Successful Bidder will be able to achieve Substantial Completion within the time such Bidder has designated in the Bid. [If applicable, include the following: Bidder must also set forth in the Bid its commitments regarding achievement of Milestones and readiness for final payment.
Successful Bidder’s time commitments will be entered into the Agreement or incorporated in the Agreement by reference to the specific terms of the Bid.

9.03 Provisions for liquidated and special damages, if any, for failure to timely attain a Milestone, Substantial Completion, or completion of the Work in readiness for final payment, are set forth in the Agreement.

ARTICLE 10—SUBSTITUTE AND “OR EQUAL” ITEMS

10.01 The Contract for the Work, as awarded, will be on the basis of materials, equipment, and procedures specified or described in the Bidding Documents without consideration during the bidding and Contract award process of possible substitute or “or-equal” items or procedures. In cases in which the Contract allows the Contractor to request that Engineer authorize the use of a substitute or “or-equal” item of material or equipment or procedure, application for such acceptance may not be made to and will not be considered by Engineer until after the Effective Date of the Contract.

10.02 The Contract for the Work, as awarded, will be on the basis of materials, equipment, and procedures specified or described in the Bidding Documents, and those “or-equal” or substitute materials and equipment subsequently approved by Engineer prior to the submittal of Bids and identified by Addendum. No item of material or equipment or alternative procedure will be considered by Engineer as an “or-equal” or substitute unless written request for approval has been submitted by Bidder and has been received by Engineer within 10 days of the issuance of the Advertisement or invitation to bid. Each such request must comply with the requirements of (1) Paragraphs 7.05 and 7.06 of the General Conditions, and (2) the Division 01 Specifications governing substitutes and “or-equals”, as applicable, and the review of the request will be governed by the principles in those provisions of the Bidding Documents. The burden of proof of the merit of the proposed item or procedure is upon Bidder. Engineer’s decision of approval or disapproval of a proposed item or procedure will be final. If Engineer approves any such proposed item or procedure, such approval will be set forth in an Addendum issued in accordance with Article 7 of these Instructions to Bidders. Bidders cannot rely upon approvals made in any other manner.

10.03 All prices that Bidder sets forth in its Bid will be based on the presumption that the Contractor will furnish the materials and equipment specified or described in the Bidding Documents, and will perform the Work in accordance with procedures indicated in the Bidding Documents, as supplemented by Addenda, if any. Assumptions regarding the possibility of post-bid approvals of “or-equal” or substitution requests are made at Bidder’s sole risk.

ARTICLE 11—SUBCONTRACTORS, SUPPLIERS, AND OTHERS

11.01 A Bidder must be prepared to retain specific Subcontractors and Suppliers for the performance of the Work if required to do so in the Specifications or elsewhere in the Bidding Documents. If a prospective Bidder objects to retaining any such Subcontractor or Supplier and the concern is not relieved by an Addendum, then the prospective Bidder should not submit a Bid.

11.02 The apparent Successful Bidder, and any other Bidder so requested by Owner or Engineer, must submit to Owner (with a copy to Engineer) a list of the Subcontractors and Suppliers proposed for the following portions of the Work within five days after the bid opening:

A. Electrical.
B. Plumbing.

11.03 If requested by Owner or Engineer, such list must be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor or Supplier. If Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor or Supplier, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit an acceptable substitute, in which case apparent Successful Bidder will submit a substitute, Bidder’s Bid price will be increased (or decreased) by the difference in cost occasioned by such substitution, and Owner may consider such price adjustment in evaluating Bids and awarding the Contract.

11.04 If apparent Successful Bidder declines to make a requested substitution, Owner may award the Contract to another Bidder, consistent with the basis for evaluating the Bids for award as set forth in these Instructions to Bidders, that proposes to use acceptable Subcontractors and Suppliers. Declining to make requested substitutions will constitute grounds for forfeiture of the bid security of any Bidder. Any Subcontractor or Supplier, so listed and against which Owner or Engineer makes no written objection prior to issuance of the Notice of Award will be deemed acceptable to Owner and Engineer subject to subsequent revocation of such acceptance as provided in Paragraph 7.07 of the General Conditions.

ARTICLE 12—PREPARATION OF BID

12.01 The Bid Form is included with the Bidding Documents.

A. All blanks on the Bid Form must be completed in ink and the Bid Form signed in ink. Erasures or alterations must be initialed in ink by the person signing the Bid Form. A Bid price must be indicated for each section, Bid item, alternate, adjustment unit price item, and unit price item listed therein.

B. If the Bid Form expressly indicates that submitting pricing on a specific alternate item is optional, and Bidder elects to not furnish pricing for such optional alternate item, then Bidder may enter the words “No Bid” or “Not Applicable.”

12.02 If Bidder has obtained the Bidding Documents as Electronic Documents, then Bidder shall prepare its Bid on a paper copy of the Bid Form printed from the Electronic Documents version of the Bidding Documents. The printed copy of the Bid Form must be clearly legible, printed on 8.5inch by 11-inch paper and as closely identical in appearance to the Electronic Document version of the Bid Form as may be practical. The Owner reserves the right to accept Bid Forms which nominally vary in appearance from the original paper version of the Bid Form, providing that all required information and submittals are included with the Bid.

12.03 A Bid by a corporation must be signed in the corporate name by a corporate officer (whose title must appear under the signature), accompanied by evidence of authority to sign. The corporate address and state of incorporation must be shown.

12.04 A Bid by a partnership must be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership must be shown.

12.05 A Bid by a limited liability company must be signed in the name of the firm by a member or other authorized person and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm must be shown.
12.06 A Bid by an individual must show the Bidder’s name and official address.

12.07 A Bid by a joint venture must be signed by an authorized representative of each joint venturer in the manner indicated on the Bid Form. The joint venture must have been formally established prior to submittal of a Bid, and the official address of the joint venture must be shown.

12.08 All names must be printed in ink below the signatures.

12.09 The Bid must contain an acknowledgment of receipt of all Addenda, the numbers of which must be filled in on the Bid Form.

12.10 Postal and e-mail addresses and telephone number for communications regarding the Bid must be indicated on the Bid Form.

12.11 The Bid must contain evidence of Bidder’s authority to do business in the state where the Project is located, or Bidder must certify in writing that it will obtain such authority within the time for acceptance of Bids and attach such certification to the Bid.

12.12 If Bidder is required to be licensed to submit a Bid or perform the Work in the state where the Project is located, the Bid must contain evidence of Bidder’s licensure, or Bidder must certify in writing that it will obtain such licensure within the time for acceptance of Bids and attach such certification to the Bid. Bidder’s state contractor license number, if any, must also be shown on the Bid Form.

ARTICLE 13—BASIS OF BID

13.01 Lump Sum
   A. Bidders must submit a Bid on a lump sum basis as set forth in the Bid Form.

13.02 Base Bid with Alternates
   A. Bidders must submit a Bid on a lump sum basis for the base Bid and include a separate price for each alternate item described in the Bidding Documents and as provided for in the Bid Form. The price for each alternate will be the amount added to or deleted from the base Bid if Owner selects the alternate.
   B. In the comparison of Bids, alternates will be applied in the same order of priority as listed in the Bid Form.

13.03 Sectional Bids
   A. Bidders may submit a Bid on any individual section or any combination of sections, as set forth in the Bid Form.
   B. Submission of a Bid on any section signifies Bidder’s willingness to enter into a Contract for that section alone at the price offered.
   C. If Bidder submits Bids on individual sections and a Bid based on a combination of those sections, such combined Bid need not be the sum of the Bids on the individual sections.
   D. Bidders offering a Bid on one or more sections must be capable of completing the Work covered by those sections within the time period stated in the Agreement.
13.04 Cost-Plus-Fee Bids

A. Bidders must submit a Bid on the Contractor’s fee, which must be in addition to compensation for Cost of the Work. Such fee must be either (1) a fixed fee, (2) percentages of specified categories of costs, or (3) a percentage applicable to the Cost of the Work as a whole, as set forth in the Bid Form.

B. If the Contractor’s fee, as set forth in the Bid Form, is to be based on percentages of categories of cost, or on a percentage applicable to the Cost of the Work as a whole, then Bidders must enter a maximum amount limiting the total fee if required by the Bid Form to do so.

C. Bidders must submit a Bid on the Guaranteed Maximum Price, setting a maximum amount on the compensable Cost of the Work plus Contractor’s fee, if required by the Bid Form to do so.

13.05 Unit Price

A. Bidders must submit a Bid on a unit price basis for each item of Work listed in the unit price section of the Bid Form.

B. The “Bid Price” (sometimes referred to as the extended price) for each item of Unit Price Work will be the product of the “Estimated Quantity”, which Owner or its representative has set forth in the Bid Form, for the item and the corresponding “Bid Unit Price” offered by the Bidder. The total of all unit price bid items will be the sum of these “Bid Prices”; such total will be used by Owner for Bid comparison purposes. The final quantities and final Contract Price will be determined in accordance with Paragraph 13.03 of the General Conditions.

C. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

13.06 Cash Allowances

A. For cash allowances the bid price (for items other than cash allowances) must include such amounts as Bidder deems proper for Contractor’s overhead, handling and installation costs, profit, and other expenses on account of cash allowances, if any, named in the Contract Documents, in accordance with Paragraph 13.02.B of the General Conditions.

13.07 Price-Plus-Time Bids

A. Owner will consider the time of Substantial Completion commitment made by Bidder in the comparison of Bids.

B. Bidder must designate the number of days required to achieve Substantial Completion of the Work and enter that number in the Bid Form as the total number of calendar days to substantially complete the Work.

C. The total number of calendar days for Substantial Completion designated by Bidder must be less than or equal to a maximum of [number] days, but not less than the minimum of [number] days. If Bidder purports to designate a time for Substantial Completion that is less than the allowed minimum, or greater than the allowed maximum, Owner will reject the Bid as nonresponsive.
D. The Agreement as signed will contain the Substantial Completion time designated in Successful Bidder’s Bid, and the Contractor will be assessed liquidated damages at the rate stated in the Agreement for failure to attain Substantial Completion within that time.

E. [Bidder must also designate the time in which it will achieve Milestones, and achieve readiness for final payment. Such time commitments must be consistent with the “Time of Substantial Completion” to which Bidder commits. The Agreement as executed will contain, as binding Contract Times, Successful Bidder’s time commitments regarding Milestones, as applicable, and readiness for final payment.]

ARTICLE 14—SUBMITTAL OF BID

14.01 The Bidding Documents include one separate, unbound copy of the Bid Form, and, where required, the Bid Bond Form and other supplements to the Bid Form. The unbound copy of the Bid Form and supplements (if any) is to be completed and submitted with the Bid security and the other documents required with the Bid by Article 2 of the Bid Form.

14.02 A Bid must be received no later than the date and time prescribed and at the place indicated in the Advertisement or invitation to bid and must be enclosed in a plainly marked package with the Project title, and, if applicable, the designated portion of the Project for which the Bid is submitted, and the name and address of Bidder, and must be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery method, the sealed envelope containing the Bid must be enclosed in a separate package plainly marked on the outside with the notation “BID ENCLOSED.” A mailed Bid must be addressed to the location designated in the Advertisement or invitation to bid.

14.03 Bids received after the date and time prescribed for the opening of Bids, or not submitted at the correct location or in the designated manner, will not be accepted and will be returned to the Bidder unopened. Owner accepts no responsibility for delays in returning Bids submitted or delivered to the incorrect location.

ARTICLE 15—MODIFICATION AND WITHDRAWAL OF BID

15.01 An unopened Bid may be withdrawn by an appropriate document duly signed in the same manner that a Bid must be signed and delivered to the place where Bids are to be submitted, prior to the date and time established in the Bidding Documents for the receipt of Bids. Upon receipt of such notice, the unopened Bid will be returned to the Bidder.

15.02 If a Bidder wishes to modify its Bid prior to Bid opening, Bidder must withdraw its initial Bid in the manner specified in Paragraph 15.01 of this Article and submit a new Bid prior to the date and time for established in the Bidding Documents the receipt of Bids.

15.03 If, within 24 hours after Bids are opened, any Bidder files a duly signed, written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of Owner that there was a
material and substantial mistake in the preparation of its Bid, the Bidder may withdraw its Bid, and the bid security will be returned.

ARTICLE 16—OPENING OF BIDS

16.01 Bids will be opened at the time and place indicated in the Advertisement or invitation to bid and, unless obviously non-responsive, will be read aloud publicly. An abstract of the amounts of the base Bids and major alternates, if any, will be made available to Bidders after the opening of Bids.

ARTICLE 17—BIDS TO REMAIN SUBJECT TO ACCEPTANCE

17.01 All Bids will remain subject to acceptance for the period of time stated in the Bid Form, but Owner may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.

ARTICLE 18—EVALUATION OF BIDS AND AWARD OF CONTRACT

18.01 Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner also reserves the right to waive all minor Bid informalities not involving price, time, or changes in the Work.

18.02 Owner will reject the Bid of any Bidder that Owner finds, after reasonable inquiry and evaluation, to not be responsible. Owner may reject the Bid of any Bidder that fails to demonstrate appropriate qualifications, experience, and resources for the Work, in accordance with Article 3 of these Instructions to Bidders.

18.03 If Bidder purports to add terms or conditions to its Bid, takes exception to any provision of the Bidding Documents, or attempts to alter the contents of the Contract Documents for purposes of the Bid, whether in the Bid itself or in a separate communication to Owner or Engineer, the Owner will reject the Bid as nonresponsive.

18.04 Basis for Award of Contract

A. If Owner awards the contract for the Work, such award will be to the responsible Bidder submitting the lowest-priced, responsive Bid that has not otherwise been disqualified.

B. Owner reserves the right to award the Contract to the Bidder determined by Owner to be in Owner’s best interest, regardless of whether such Bid is the lowest-priced Bid received.

18.05 Evaluation of Bids

A. In evaluating Bids, Owner will consider whether the Bids comply with the prescribed requirements, and such alternates, unit prices, and other data, as may be requested in the Bid Form or elsewhere in the Bidding Documents, or prior to the Notice of Award.

B. Based Bid with Alternates: In the comparison of Bids, alternates will be applied in the same order of priority as listed in the Bid Form. To determine the Bid prices for purposes of comparison, Owner will announce to all Bidders, present at the opening of Bids, a “Base Bid plus alternates” budget after receiving all Bids, but prior to opening the Bids; Bidders no present for the opening of Bids may obtain the announced budget amount from Owner or Engineer. For comparison purposes, alternates will be accepted, following the order of priority established in the Bid Form, until doing so would cause the budget to be exceeded. After determination of the Successful Bidder based on this comparative process and on the
responsiveness, responsibility, and other factors set forth in these Instructions to Bidders, the award may be made to said Successful Bidder on its base Bid and any combination of its additive alternate bid prices for which Owner determines funds will be available at the time of award.

C. **Sectional Bids:** For determination of the apparent low Bidder(s) when sectional Bids are submitted, Bids will be compared on the basis of the aggregate of the Bids for separate sections and the Bids for combined sections that result in the lowest total amount for all of the Work.

D. **Unit Price Work:** For the determination of the apparent low-price Bid when unit price bids are submitted, Bids will be compared on the basis of the total of the products of the estimated quantity of each item and unit price bid for that item, together with amount(s) of lump sum items (if any).

E. **Cost-Plus-a-Fee Bidding:** For the determination of the apparent low-priced Bid when cost-plus-fee Bids are submitted, Bids will be compared on the basis of the Guaranteed Maximum Price set forth by Bidder on the Bid Form.

F. **Price-Plus-Time Bidding:** Bid prices will be compared after adjusting for differences in time of Substantial Completion (total number of calendar days to substantially complete the Work) designated by Bidder. The adjusting amount will be determined at the rate set forth in the Agreement for liquidated damages for failing to achieve Substantial Completion, or such other amount that Owner has designated in the Bid Form.

1. The method for calculating the lowest-priced Bid for comparison will be the summation of the bid price shown in the Bid Form plus the product of the Bidder-specified time of Substantial Completion in calendar days multiplied by [the rate for liquidated damages] [or other Owner-designated daily rate] in dollars per day.

2. This procedure is only used to determine the lowest-priced Bid for comparison and Contractor selection purposes. The Contract Price for compensation and payment purposes remains the bid price shown in the Bid Form, unless duly modified in accordance with the Contract.

18.06 In evaluating whether a Bidder is responsible, Owner will consider the qualifications, experience, and resources of the Bidder and may consider the qualifications, experience, and resources of Subcontractors and Suppliers proposed for those portions of the Work for which the identity of Subcontractors and Suppliers must be submitted as provided in the Bidding Documents.

18.07 Owner, with or without Engineer’s assistance, may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders and any proposed Subcontractors or Suppliers.

**ARTICLE 19—BONDS AND INSURANCE**

19.01 Paragraph 2.01 and Article 6 of the General Conditions, as may be modified by the Supplementary Conditions, set forth Owner’s requirements as to performance and payment bonds, other required bonds (if any), and insurance. When the Successful Bidder delivers the signed Agreement
to Owner (or Owner’s representative), it must be accompanied by required bonds and insurance documentation.

19.02 Article 8 (“Bid Security”) of these Instructions to Bidders addresses any requirements for providing bid bonds as part of the bidding process.

ARTICLE 20—SIGNING OF AGREEMENT

20.01 When Owner issues a Notice of Award to the Successful Bidder, it will be accompanied by the unsigned counterparts of the Agreement, along with the other Contract Documents as identified in the Agreement. Within [15] days thereafter, Successful Bidder must execute and deliver the required number of counterparts of the Agreement and required bonds and insurance documentation (as required by the Contract Documents) to [Owner] [Owner’s representative, as indicated in the Notice of Award]. Within [10] days thereafter, Owner will deliver one fully signed counterpart of the Agreement to Successful Bidder, together with printed and electronic copies of the Contract Documents as stated in Paragraph 2.02 of the General Conditions.

ARTICLE 21—SALES AND USE TAXES

21.01 Owner is exempt from [name of state] state sales and use taxes on materials and equipment to be incorporated in the Work. (Exemption No. [number]). Said taxes must not be included in the Bid. Refer to Paragraph SC-7.10 of the Supplementary Conditions for additional information.

ARTICLE 22—CONTRACTS TO BE ASSIGNED
This page intentionally left blank.
The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

ARTICLE 1—OWNER AND BIDDER

1.01 This Bid is submitted to: City of Hailey, Idaho 115 Main Street South, Suite H, Hailey, Idaho 833333.

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2—ATTACHMENTS TO THIS BID

2.01 The following documents are submitted with and made a condition of this Bid:
   A. Required Bid security;
   B. List of Proposed Subcontractors;
   C. List of Proposed Suppliers;
   D. Evidence of authority to do business in the state of the Project; or a written covenant to obtain such authority within the time for acceptance of Bids;
   E. Contractor’s license number as evidence of Bidder’s State Contractor’s License or a covenant by Bidder to obtain said license within the time for acceptance of Bids; and
   F. Required Bidder Qualification Statement with supporting data.

ARTICLE 3—BASIS OF BID—LUMP SUM BID AND UNIT PRICES

3.01 Lump Sum Bids
   A. Bidder will complete the Work in accordance with the Contract Documents for the following lump sum (stipulated) price(s), together with any unit prices indicated in Paragraph 3.02:
      1. Lump Sum Price (Single Lump Sum)

3.02 Unit Price Bids
   A. Bidder will perform the following Work at the indicated unit prices:

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<th>Item No.</th>
<th>Description</th>
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<th>Estimated Quantity</th>
<th>Bid Unit Price</th>
<th>Bid Amount</th>
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B. Bidder acknowledges that:

1. each Bid Unit Price includes an amount considered by Bidder to be adequate to cover Contractor’s overhead and profit for each separately identified item, and

2. the estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Work will be based on actual quantities, determined as provided in the Contract Documents.

3.03 Total Bid Price (Lump Sum and Unit Prices)

| Total Bid Price (Total of all Lump Sum and Unit Price Bids) | $ |

ARTICLE 4—TIME OF COMPLETION

4.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before the dates or within the number of days indicated in the Agreement.

4.02 Bidder agrees that the Work will be substantially complete on or before [__________], and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before [__________].

4.03 Bidder agrees that the Work will be substantially complete within [__________] calendar days after the date when the Contract Times commence to run as provided in Paragraph 4.01 of the General Conditions, and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions within [__________] calendar days after the date when the Contract Times commence to run.

4.04 Bidder accepts the provisions of the Agreement as to liquidated damages.

ARTICLE 5—BIDDER’S ACKNOWLEDGEMENTS: ACCEPTANCE PERIOD, INSTRUCTIONS, AND RECEIPT OF ADDENDA

5.01 Bid Acceptance Period

A. This Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

5.02 Instructions to Bidders

A. Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security.

5.03 Receipt of Addenda

A. Bidder hereby acknowledges receipt of the following Addenda:
ARTICLE 6—BIDDER’S REPRESENTATIONS AND CERTIFICATIONS

6.01 Bidder’s Representations

A. In submitting this Bid, Bidder represents the following:

1. Bidder has examined and carefully studied the Bidding Documents, including Addenda.

2. Bidder has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

3. Bidder is familiar with all Laws and Regulations that may affect cost, progress, and performance of the Work.

4. Bidder has carefully studied the reports of explorations and tests of subsurface conditions at or adjacent to the Site and the drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, with respect to the Technical Data in such reports and drawings.

5. Bidder has carefully studied the reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, with respect to Technical Data in such reports and drawings.

6. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Technical Data identified in the Supplementary Conditions or by definition, with respect to the effect of such information, observations, and Technical Data on (a) the cost, progress, and performance of the Work; (b) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, if selected as Contractor; and (c) Bidder’s (Contractor’s) safety precautions and programs.

7. Based on the information and observations referred to in the preceding paragraph, Bidder agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.

8. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.

9. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and of discrepancies between Site conditions and the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
10. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

11. The submission of this Bid constitutes an incontrovertible representation by Bidder that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

6.02 Bidder’s Certifications

A. The Bidder certifies the following:

1. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation.

2. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid.

3. Bidder has not solicited or induced any individual or entity to refrain from bidding.

4. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 8.02.A:
   a. Corrupt practice means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process.
   b. Fraudulent practice means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition.
   c. Collusive practice means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels.
   d. Coercive practice means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.
BIDDER hereby submits this Bid as set forth above:

Bidder:

__________________________________________
(typed or printed name of organization)

By: _________________________________________
(individual’s signature)

Name: _______________________________________
(typed or printed)

Title: _______________________________________
(typed or printed)

Date: ________________________________________
(typed or printed)

If Bidder is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.

Attest: _______________________________________
(individual’s signature)

Name: _______________________________________
(typed or printed)

Title: _______________________________________
(typed or printed)

Date: ________________________________________
(typed or printed)

Bidder’s Address for giving notices:

_________________________________________________________________________
_________________________________________________________________________

Bidder’s Contact Person:

Name: _______________________________________
(typed or printed)

Title: _______________________________________
(typed or printed)

Phone: _______________________________________

Email: _______________________________________

Address: _______________________________________
_________________________________________________________________________

Bidder’s Contractor License No.: (if applicable) _________________________________
This page intentionally left blank.
## BID BOND (PENAL SUM FORM)

<table>
<thead>
<tr>
<th>Bidder</th>
<th>Surety</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name:</strong></td>
<td><strong>Name:</strong></td>
</tr>
<tr>
<td><strong>Address (principal place of business):</strong></td>
<td><strong>Address (principal place of business):</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Owner</th>
<th>Bid</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name:</strong> City of Hailey, Idaho</td>
<td><strong>Project:</strong> Woodside WRF – UV Installation</td>
</tr>
<tr>
<td><strong>Address (principal place of business):</strong> 115 Main Street South, Suite H, Hailey, Idaho 83333</td>
<td><strong>Address:</strong> 4297 Glenbrook Drive, Hailey, Idaho 83313</td>
</tr>
</tbody>
</table>

**Bid Due Date:** November 10th, 2022

Surety and Bidder, intending to be legally bound hereby, subject to the terms set forth in this Bid Bond, do each cause this Bid Bond to be duly executed by an authorized officer, agent, or representative.

<table>
<thead>
<tr>
<th>Bidder</th>
<th>Surety</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>(Full formal name of Bidder)</strong></td>
<td><strong>(Full formal name of Surety) (corporate seal)</strong></td>
</tr>
<tr>
<td><strong>By:</strong></td>
<td><strong>By:</strong></td>
</tr>
<tr>
<td><strong>(Signature)</strong></td>
<td><strong>(Signature) (Attach Power of Attorney)</strong></td>
</tr>
<tr>
<td><strong>Name:</strong></td>
<td><strong>Name:</strong></td>
</tr>
<tr>
<td><strong>(Printed or typed)</strong></td>
<td><strong>(Printed or typed)</strong></td>
</tr>
<tr>
<td><strong>Title:</strong></td>
<td><strong>Title:</strong></td>
</tr>
</tbody>
</table>

**Attest:**

<table>
<thead>
<tr>
<th>Bidder</th>
<th>Surety</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>(Signature)</strong></td>
<td><strong>(Signature)</strong></td>
</tr>
<tr>
<td><strong>Name:</strong></td>
<td><strong>Name:</strong></td>
</tr>
<tr>
<td><strong>(Printed or typed)</strong></td>
<td><strong>(Printed or typed)</strong></td>
</tr>
<tr>
<td><strong>Title:</strong></td>
<td><strong>Title:</strong></td>
</tr>
</tbody>
</table>

**Notes:**
1. Addresses are to be used for giving any required notice.
2. Provide execution by any additional parties, such as joint venturers, if necessary.
1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of Bidder’s and Surety’s liability. Recovery of such penal sum under the terms of this Bond will be Owner’s sole and exclusive remedy upon default of Bidder.

2. Default of Bidder occurs upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.

3. This obligation will be null and void if:
   3.1. Owner accepts Bidder’s Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or
   3.2. All Bids are rejected by Owner, or
   3.3. Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).

4. Payment under this Bond will be due and payable upon default of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.

5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions does not in the aggregate exceed 120 days from the Bid due date without Surety’s written consent.

6. No suit or action will be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety, and in no case later than one year after the Bid due date.

7. Any suit or action under this Bond will be commenced only in a court of competent jurisdiction located in the state in which the Project is located.

8. Notices required hereunder must be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Postal Service registered or certified mail, return receipt requested, postage pre-paid, and will be deemed to be effective upon receipt by the party concerned.

9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.

10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond will be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute governs and the remainder of this Bond that is not in conflict therewith continues in full force and effect.

11. The term “Bid” as used herein includes a Bid, offer, or proposal as applicable.
SECTION 00 51 16
NOTICE OF AWARD FOR PROCUREMENT CONTRACTS
For
Woodside WRF– UV Installation
For
City of Hailey, Idaho

Dated:

TO:

(Successful BIDDER - SELLER)

ADDRESS:

CONTRACT FOR: Woodside WRF– UV Installation
City of Hailey, Idaho

You are notified that the Contract Time under the above contract will commence to run on as of the
date of the Notice of Proceed for Procurement Contracts. By that date, you are to start performing
your obligations under the Contract Documents.

Within fifteen (15) days of this Notice of Award for Procurement Contracts, you must deliver to the Buyer:
▪ Certificates of insurance are required to be purchased and maintained in accordance with the
  Contract Documents.
▪ Signed Copy of the Agreement Between Buyer and Seller.
▪ Bonds are required to be purchased and maintained in accordance with the Contract
  Documents.
▪ All applicable licenses required by the contract documents.

City of Hailey, Idaho
(Buyer)

By: __________________________
(Buyer’s Authorized Signatory)

______________________________
(printed name and title)

(Use Certified Mail,
Return Receipt Requested)

END OF SECTION
AGREEMENT
BETWEEN OWNER AND CONTRACTOR
FOR CONSTRUCTION CONTRACT (STIPULATED PRICE)

This Agreement is by and between City of Hailey, Idaho ("Owner") and [__________] ("Contractor").

Terms used in this Agreement have the meanings stated in the General Conditions and the Supplementary Conditions.

Owner and Contractor hereby agree as follows:

ARTICLE 1—WORK

1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:

ARTICLE 2—THE PROJECT

2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as follows:

The City of Hailey’s Woodside WRF has purchased a Wedeco TAK55 ultraviolet (UV) disinfection system to be installed. The Project will include installation of the UV disinfection system, associated equipment and instrumentation, and modifications to the UV channels.

ARTICLE 3—ENGINEER

3.01 The Owner has retained HDR Engineering, Inc. ("Engineer") to act as Owner’s representative, assume all duties and responsibilities of Engineer, and have the rights and authority assigned to Engineer in the Contract.

3.02 The part of the Project that pertains to the Work has been designed by Engineer.

ARTICLE 4—CONTRACT TIMES

4.01 Time is of the Essence

A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

4.02 Contract Times: Days

A. The Work will be substantially complete within 180 days after the date when the Contract Times commence to run as provided in Paragraph 4.01 of the General Conditions, and completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions within 270 days after the date when the Contract Times commence to run.

4.03 Liquidated Damages

A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial and other losses if the Work is not completed and Milestones not achieved within the Contract Times, as duly modified. The parties also recognize the delays, expense, and difficulties involved in proving, in a legal or arbitration
proceeding, the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty):

1. **Substantial Completion:** Contractor shall pay Owner $1,500 for each day that expires after the time (as duly adjusted pursuant to the Contract) specified above for Substantial Completion, until the Work is substantially complete.

2. **Completion of Remaining Work:** After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Times (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner $500 for each day that expires after such time until the Work is completed and ready for final payment.

3. Liquidated damages for failing to timely attain Milestones, Substantial Completion, and final completion are not additive, and will not be imposed concurrently.

B. If Owner recovers liquidated damages for a delay in completion by Contractor, then such liquidated damages are Owner's sole and exclusive remedy for such delay, and Owner is precluded from recovering any other damages, whether actual, direct, excess, or consequential, for such delay, except for special damages (if any) specified in this Agreement.

C. **Bonus:** Contractor and Owner further recognize the Owner will realize financial and other benefits if the Work is completed prior to the time specified for Substantial Completion. Accordingly, Owner and Contractor agree that as a bonus for early completion, Owner shall pay Contractor $500 for each day prior to the time specified above for Substantial Completion (as duly adjusted pursuant to the Contract) that the Work is substantially complete. The maximum value of the bonus will be limited to $15,000.

4.04 **Special Damages**

A. Contractor shall reimburse Owner (1) for fines and penalties (if any) imposed on Owner as a direct result of Contractor's failure to attain Substantial Completion according to the Contract Times, (2) for fines and penalties (if any) imposed on Owner by an authority having jurisdiction for actions or inaction of Contractor arising from Contractor's performance of the Work (regardless of whether such event was connected with any delay in compliance with the Contract Times), and (3) for the actual costs reasonably incurred by Owner for engineering, construction observation, inspection, and administrative services needed after the time specified in Paragraph 4.02 for Substantial Completion (as duly adjusted pursuant to the Contract), until the Work is substantially complete.

B. After Contractor achieves Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Times, Contractor shall reimburse Owner for the actual costs reasonably incurred by Owner for engineering, construction observation, inspection, and administrative services needed after the time specified in Paragraph 4.02 for Work to be completed and ready for final payment (as duly adjusted pursuant to the Contract), until the Work is completed and ready for final payment.

C. The special damages imposed in this paragraph are supplemental to any liquidated damages for delayed completion established in this Agreement.
4.05 Owner reserves the right to withhold from payments due Contractor under the Contract amounts for liquidated damages (if any), special damages (if any), and performance damages (if any) in accordance with the Contract.

ARTICLE 5—CONTRACT PRICE

5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents, the amounts that follow, subject to adjustment under the Contract:

A. For all Work other than Unit Price Work, a lump sum of $[______].
   All specific cash allowances are included in the above price in accordance with Paragraph 13.02 of the General Conditions.

B. For all Unit Price Work, an amount equal to the sum of the extended prices (established for each separately identified item of Unit Price Work by multiplying the unit price times the actual quantity of that item).

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
<th>Unit</th>
<th>Estimated Quantity</th>
<th>Unit Price</th>
<th>Extended Price</th>
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</table>

Total of all Extended Prices for Unit Price Work (subject to final adjustment based on actual quantities) $[______].

The extended prices for Unit Price Work set forth as of the Effective Date of the Contract are based on estimated quantities. As provided in Paragraph 13.03 of the General Conditions, estimated quantities are not guaranteed, and determinations of actual quantities and classifications are to be made by Engineer.

C. Total of Lump Sum Amount and Unit Price Work (subject to final Unit Price adjustment) $[______].

D. For all Work, at the prices stated in Contractor’s Bid, attached hereto as an exhibit.

ARTICLE 6—PAYMENT PROCEDURES

6.01 Submittal and Processing of Payments

A. Contractor shall submit Applications for Payment in accordance with Article 15 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.
6.02  Progress Payments; Retainage

A.  Owner shall make progress payments on the basis of Contractor’s Applications for Payment on or about the 25th day of each month during performance of the Work as provided in Paragraph 6.02.A.1 below, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.

1.  Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract.

   a.  Ninety-five (95) percent of the value of the Work completed (with the balance being retainage).

      1)  If 50 percent or more of the Work has been completed, as determined by Engineer, and if the character and progress of the Work have been satisfactory to Owner and Engineer, then as long as the character and progress of the Work remain satisfactory to Owner and Engineer, there will be no additional retainage; and

   b.  Ninety-five (95) percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).

B.  Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to ninety-seven and one-half (97.5) percent of the Work completed, less such amounts set off by Owner pursuant to Paragraph 15.01.E of the General Conditions, and less Engineer’s estimate of the value of Work to be completed or corrected as shown on the punch list of items to be completed or corrected prior to final payment.

6.03  Final Payment

A.  Upon final completion and acceptance of the Work, Owner shall pay the remainder of the Contract Price in accordance with Paragraph 15.06 of the General Conditions.

6.04  Consent of Surety

A.  Owner will not make final payment, or return or release retainage at Substantial Completion or any other time, unless Contractor submits written consent of the surety to such payment, return, or release.

6.05  Interest

A.  All amounts not paid when due will bear interest at the rate of twelve (12) percent per annum.

ARTICLE 7—CONTRACT DOCUMENTS

7.01  Contents

A.  The Contract Documents consist of all of the following:

   1.  This Agreement.
2. Bonds:
   a. Performance bond (together with power of attorney).
   b. Payment bond (together with power of attorney).

3. General Conditions.

4. Supplementary Conditions.

5. Wage Determination Schedule.


7. Specifications as listed in the Table of Contents of the Project Manual.

8. Drawings (not attached but incorporated by reference) consisting of xxx (xx) sheets with each sheet bearing the following general title: UV Installation Drawings.

9. Addenda (numbers [__________] to [__________], inclusive).

10. Exhibits to this Agreement (enumerated as follows):
    a. Contractor’s Bid.

11. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:
    a. Notice to Proceed.
    b. Work Change Directives.
    c. Change Orders.
    d. Field Orders.
    e. Warranty Bond, if any.

B. The Contract Documents listed in Paragraph 7.01.A are attached to this Agreement (except as expressly noted otherwise above).

C. There are no Contract Documents other than those listed above in this Article 7.

D. The Contract Documents may only be amended, modified, or supplemented as provided in the Contract.

ARTICLE 8—REPRESENTATIONS, CERTIFICATIONS, AND STIPULATIONS

8.01 Contractor’s Representations

   A. In order to induce Owner to enter into this Contract, Contractor makes the following representations:

   1. Contractor has examined and carefully studied the Contract Documents, including Addenda.

   2. Contractor has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
3. Contractor is familiar with all Laws and Regulations that may affect cost, progress, and performance of the Work.

4. Contractor has carefully studied the reports of explorations and tests of subsurface conditions at or adjacent to the Site and the drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, with respect to the Technical Data in such reports and drawings.

5. Contractor has carefully studied the reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, with respect to Technical Data in such reports and drawings.

6. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Technical Data identified in the Supplementary Conditions or by definition, with respect to the effect of such information, observations, and Technical Data on (a) the cost, progress, and performance of the Work; (b) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (c) Contractor’s safety precautions and programs.

7. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.

8. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.

9. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and of discrepancies between Site conditions and the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.

10. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

11. Contractor’s entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

8.02 Contractor’s Certifications

A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 8.02:

1. “corrupt practice” means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in the Contract execution;
2. “fraudulent practice” means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;

3. “collusive practice” means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and

4. “coercive practice” means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

8.03 Standard General Conditions

A. Owner stipulates that if the General Conditions that are made a part of this Contract are EJCDC® C-700, Standard General Conditions for the Construction Contract (2018), published by the Engineers Joint Contract Documents Committee, and if Owner is the party that has furnished said General Conditions, then Owner has plainly shown all modifications to the standard wording of such published document to the Contractor, through a process such as highlighting or “track changes” (redline/strikeout), or in the Supplementary Conditions.
IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement.
This Agreement will be effective on [______________, 2022] (which is the Effective Date of the Contract).

Contractor:

__________________________
(typed or printed name of organization)
By: ________________________
(individual’s signature)
Date: ______________________
(date signed)
Name: ______________________
(typed or printed)
Title: ______________________
(typed or printed)
Attest: _____________________
(individual’s signature)
Title: ______________________
(typed or printed)
Address for giving notices:
_________________________________________________
_________________________________________________
Designated Representative:
Name: ______________________
(typed or printed)
Title: ______________________
(typed or printed)
Address: ____________________
_________________________________________________
_________________________________________________
Phone: ______________________
Email: ______________________
License No.: __________________
(state applicable)
State: _______________________

(If [Type of Entity] is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest:
__________________________
(individual’s signature)
Title: ______________________
(typed or printed)
Address for giving notices:
_________________________________________________
_________________________________________________
Designated Representative:
Name: ______________________
(typed or printed)
Title: ______________________
(typed or printed)
Address: ____________________
_________________________________________________
_________________________________________________
Phone: ______________________
Email: ______________________
License No.: __________________
(state applicable)
State: _______________________

(If [Type of Entity] is a corporation, attach evidence of authority to sign. If [Type of Entity] is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of this Agreement.)
SECTION 00 55 19
NOTICE TO PROCEED WITH FABRICATION FOR PROCUREMENT CONTRACTS

Dated ________________, 2022

TO:_____________________________________________

(SELLER)

ADDRESS:_____________________________________________

_____________________________________________

PROJECT NO.: ___________

CONTRACT FOR: Woodside WRF – UV Installation

You are notified to proceed with Fabrication of Equipment that satisfies Seller’s requirements for meeting the delivery schedule listed in the Agreement. Seller shall commence fabrication of equipment so as to meet these dates. The place of delivery and conditions shall be as specified in the Agreement. You are to continue performing your obligations under the Contract Documents.

_____________________________________________

Buyer

By:_____________________________________________

(Authorized Signatory of Buyer)

END OF SECTION
### PERFORMANCE BOND

<table>
<thead>
<tr>
<th>Contractor</th>
<th>Surety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name:</td>
<td>Name:</td>
</tr>
<tr>
<td>Address <em>(principal place of business)</em>:</td>
<td>Address <em>(principal place of business)</em>:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Owner</th>
<th>Contract</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name: City of Hailey, Idaho</td>
<td>Description <em>(name and location)</em>: Woodside WRF – UV Installation</td>
</tr>
<tr>
<td>Mailing address <em>(principal place of business)</em>: 115 Main Street South, Suite H, Hailey, Idaho 83333</td>
<td>4297 Glenbrook Drive, Hailey, Idaho 83313</td>
</tr>
<tr>
<td></td>
<td>Contract Price:</td>
</tr>
<tr>
<td></td>
<td>Effective Date of Contract:</td>
</tr>
</tbody>
</table>

**Bond**

- Bond Amount:  
- Date of Bond:  
* (Date of Bond cannot be earlier than Effective Date of Contract)  
- Modifications to this Bond form:  
- None  
- See Paragraph 16

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth in this Performance Bond, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.

**Contractor as Principal**

- By:  
- Name:  
- Title:  
- Attest:  
- Name:  
- Title: 

**Surety**

- By:  
- Name:  
- Title:  
- Attest:  
- Name:  
- Title:

**Notes:** (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party is considered plural where applicable.
1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Paragraph 3.

3. If there is no Owner Default under the Construction Contract, the Surety’s obligation under this Bond will arise after:

   3.1. The Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice may indicate whether the Owner is requesting a conference among the Owner, Contractor, and Surety to discuss the Contractor’s performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner’s notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Paragraph 3.1 will be held within ten (10) business days of the Surety’s receipt of the Owner’s notice. If the Owner, the Contractor, and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement does not waive the Owner’s right, if any, subsequently to declare a Contractor Default;

   3.2. The Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and

   3.3. The Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

4. Failure on the part of the Owner to comply with the notice requirement in Paragraph 3.1 does not constitute a failure to comply with a condition precedent to the Surety’s obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

5. When the Owner has satisfied the conditions of Paragraph 3, the Surety shall promptly and at the Surety’s expense take one of the following actions:

   5.1. Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

   5.2. Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;

   5.3. Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owners concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

   5.4. Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:
5.4.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or

5.4.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

6. If the Surety does not proceed as provided in Paragraph 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Paragraph 5.4, and the Owner refuses the payment, or the Surety has denied liability, in whole or in part, without further notice, the Owner shall be entitled to enforce any remedy available to the Owner.

7. If the Surety elects to act under Paragraph 5.1, 5.2, or 5.3, then the responsibilities of the Surety to the Owner will not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety will not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication for:

7.1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;

7.2 additional legal, design professional, and delay costs resulting from the Contractor’s Default, and resulting from the actions or failure to act of the Surety under Paragraph 5; and

7.3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

8. If the Surety elects to act under Paragraph 5.1, 5.3, or 5.4, the Surety’s liability is limited to the amount of this Bond.

9. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price will not be reduced or set off on account of any such unrelated obligations. No right of action will accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors, and assigns.

10. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.

11. Any proceeding, legal or equitable, under this Bond must be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and must be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum periods of limitations available to sureties as a defense in the jurisdiction of the suit will be applicable.

12. Notice to the Surety, the Owner, or the Contractor must be mailed or delivered to the address shown on the page on which their signature appears.

13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement will be deemed deleted therefrom and provisions conforming to such
statutory or other legal requirement will be deemed incorporated herein. When so furnished, the intent is that this Bond will be construed as a statutory bond and not as a common law bond.

14. Definitions

14.1. Balance of the Contract Price—The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made including allowance for the Contractor for any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

14.2. Construction Contract—The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

14.3. Contractor Default—Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

14.4. Owner Default—Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

14.5. Contract Documents—All the documents that comprise the agreement between the Owner and Contractor.

15. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond will be deemed to be Subcontractor and the term Owner will be deemed to be Contractor.

16. Modifications to this Bond are as follows: [ __________ ]
# PAYMENT BOND

<table>
<thead>
<tr>
<th>Contractor</th>
<th>Surety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name:</td>
<td>Name:</td>
</tr>
<tr>
<td>Address (principal place of business):</td>
<td>Address (principal place of business):</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Owner</th>
<th>Contract</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name: City of Hailey, Idaho</td>
<td>Description (name and location): Woodside WRF – UV Installation</td>
</tr>
<tr>
<td>Mailing address (principal place of business): 115 Main Street South, Suite H, Hailey, Idaho 83333</td>
<td>4297 Glenbrook Drive, Hailey, Idaho 83313</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bond</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bond Amount:</td>
</tr>
<tr>
<td>Date of Bond: (Date of Bond cannot be earlier than Effective Date of Contract)</td>
</tr>
<tr>
<td>Modifications to this Bond form: □ None □ See Paragraph 18</td>
</tr>
</tbody>
</table>

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth in this Payment Bond, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.

<table>
<thead>
<tr>
<th>Contractor as Principal</th>
<th>Surety</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Full formal name of Contractor)</td>
<td>(Full formal name of Surety) (corporate seal)</td>
</tr>
<tr>
<td>By:</td>
<td>By:</td>
</tr>
<tr>
<td>Name:</td>
<td>Name:</td>
</tr>
<tr>
<td>(Signature)</td>
<td>(Signature)(Attach Power of Attorney)</td>
</tr>
<tr>
<td>(Printed or typed)</td>
<td>(Printed or typed)</td>
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<tr>
<td>Title:</td>
<td>Title:</td>
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<td>Attest:</td>
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<td>(Printed or typed)</td>
<td>(Printed or typed)</td>
</tr>
<tr>
<td>Title:</td>
<td>Title:</td>
</tr>
</tbody>
</table>

Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party is considered plural where applicable.
1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner to pay for labor, materials, and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.

2. If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies, and holds harmless the Owner from claims, demands, liens, or suits by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.

3. If there is no Owner Default under the Construction Contract, the Surety’s obligation to the Owner under this Bond will arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 13) of claims, demands, liens, or suits against the Owner or the Owner’s property by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, and tendered defense of such claims, demands, liens, or suits to the Contractor and the Surety.

4. When the Owner has satisfied the conditions in Paragraph 3, the Surety shall promptly and at the Surety’s expense defend, indemnify, and hold harmless the Owner against a duly tendered claim, demand, lien, or suit.

5. The Surety’s obligations to a Claimant under this Bond will arise after the following:
   5.1. Claimants who do not have a direct contract with the Contractor
       5.1.1. have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
       5.1.2. have sent a Claim to the Surety (at the address described in Paragraph 13).
   5.2. Claimants who are employed by or have a direct contract with the Contractor have sent a Claim to the Surety (at the address described in Paragraph 13).

6. If a notice of non-payment required by Paragraph 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant’s obligation to furnish a written notice of non-payment under Paragraph 5.1.1.

7. When a Claimant has satisfied the conditions of Paragraph 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety’s expense take the following actions:
   7.1. Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and
   7.2. Pay or arrange for payment of any undisputed amounts.
   7.3. The Surety’s failure to discharge its obligations under Paragraph 7.1 or 7.2 will not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Paragraph 7.1 or 7.2, the Surety shall indemnify the Claimant for the reasonable attorney’s fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.
8. The Surety’s total obligation will not exceed the amount of this Bond, plus the amount of reasonable attorney’s fees provided under Paragraph 7.3, and the amount of this Bond will be credited for any payments made in good faith by the Surety.

9. Amounts owed by the Owner to the Contractor under the Construction Contract will be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfying obligations of the Contractor and Surety under this Bond, subject to the Owner’s priority to use the funds for the completion of the work.

10. The Surety shall not be liable to the Owner, Claimants, or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to or give notice on behalf of Claimants, or otherwise have any obligations to Claimants under this Bond.

11. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.

12. No suit or action will be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit will be applicable.

13. Notice and Claims to the Surety, the Owner, or the Contractor must be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, will be sufficient compliance as of the date received.

14. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement will be deemed deleted here from and provisions conforming to such statutory or other legal requirement will be deemed incorporated herein. When so furnished, the intent is that this Bond will be construed as a statutory bond and not as a common law bond.

15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

16. Definitions

   16.1. Claim—A written statement by the Claimant including at a minimum:

       16.1.1. The name of the Claimant;

       16.1.2. The name of the person for whom the labor was done, or materials or equipment furnished;

       16.1.3. A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Construction Contract;

       16.1.4. A brief description of the labor, materials, or equipment furnished;
16.1.5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;

16.1.6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;

16.1.7. The total amount of previous payments received by the Claimant; and

16.1.8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.

16.2. **Claimant**—An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic’s lien or similar statute against the real property upon which the Project is located. The intent of this Bond is to include without limitation in the terms of “labor, materials, or equipment” that part of the water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor’s subcontractors, and all other items for which a mechanic’s lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.

16.3. **Construction Contract**—The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.

16.4. **Owner Default**—Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

16.5. **Contract Documents**—All the documents that comprise the agreement between the Owner and Contractor.

17. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond will be deemed to be Subcontractor and the term Owner will be deemed to be Contractor.

18. Modifications to this Bond are as follows: [ __________ ]
GUIDELINES FOR USE OF EJCDC® C-700,
STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

See HDR’s "C-000": HDR Guidelines for using the 2018 EJCDC Construction Documents for an introduction on how to use this document.

PURPOSE AND INTENDED USE OF THE DOCUMENT

EJCDC® C-700, Standard General Conditions of the Construction Contract (2018), is the foundation document for the EJCDC Construction Series. The General Conditions define the basic rights, responsibilities, risk allocations, and contractual relationship of the Owner and Contractor, and establish how the Contract is to be administered.

2.0 OTHER DOCUMENTS

EJCDC documents are intended to be used as a system and changes in one EJCDC document may require a corresponding change in other documents. Other EJCDC documents may also serve as a reference to provide insight or guidance for the preparation of this document.

These General Conditions have been prepared for use with either EJCDC® C-520, Agreement Between Owner and Contractor for Construction Contract (Stipulated Price), or EJCDC® C-525, Agreement Between Owner and Contractor for Construction Contract (Cost-Plus-Fee) (2018 Editions). The provisions of the General Conditions and the Agreement are interrelated, and a change in one may necessitate a change in the other.

To prepare supplementary conditions that are coordinated with the General Conditions, use EJCDC® C-800, Supplementary Conditions of the Construction Contract (2018).

The full EJCDC Construction series of documents is discussed in the EJCDC® C-001, Commentary on the 2018 EJCDC Construction Documents (2018).

3.0 ORGANIZATION OF INFORMATION

All parties involved in a construction project benefit significantly from a standardized approach in the location of subject matter throughout the documents. Experience confirms the danger of addressing the same subject matter in more than one location; doing so frequently leads to confusion and unanticipated legal consequences. Careful attention should be given to the guidance provided in EJCDC® N-122/AIA® A521, Uniform Location of Subject Matter (2012 Edition) when preparing documents. EJCDC® N-122/AIA® A521 is available at no charge from the EJCDC website, www.ejcdc.org, and from the websites of EJCDC’s sponsoring organizations.

If CSI MasterFormat™ is used for organizing the Project Manual, consult CSI MasterFormat™ for the appropriate document number (e.g., under 00 11 00, Advertisements and Invitations), and accordingly number the document and its pages.

4.0 EDITING THIS DOCUMENT

HDR’s ENG MSS team has already removed the cover page and made the Guidelines for Use hidden text.
Although it is permissible to revise the Standard EJCDC Text of C-700 (the content beginning at page 1 and continuing to the end), it is common practice to leave the Standard EJCDC Text of C-700 intact and unaltered, with modifications and supplementation of C-700’s provisions set forth in EJCDC® C-800, Supplementary Conditions of the Construction Contract (2018). If the Standard Text itself is revised, the user must comply with the terms of the License Agreement, Paragraph 4.0, Document-Specific Provisions, concerning the tracking or highlighting of revisions. The following is a summary of the relevant License Agreement provisions:

1. The term “Standard EJCDC Text” for C-700 refers to all text prepared by EJCDC in the main body of the document. Document covers, logos, footers, instructions, or copyright notices are not Standard EJCDC Text for this purpose.

2. During the drafting or negotiating process for C-700, it is important that the two contracting parties are both aware of any changes that have been made to the Standard EJCDC Text. Thus, if a draft or version of C-700 purports to be or appears to be an EJCDC document, the user must plainly show all changes to the Standard EJCDC Text, using “Track Changes” (redline/strikeout), highlighting, or other means of clearly indicating additions and deletions.

3. If C-700 has been revised or altered and is subsequently presented to third parties (such as potential bidders, grant agencies, lenders, or sureties) as an EJCDC document, then the changes to the Standard EJCDC Text must be shown, or the third parties must receive access to a version that shows the changes.

4. Once the document is ready to be finalized (and if applicable executed by the contracting parties), it is no longer necessary to continue to show changes to the Standard EJCDC Text. The user may produce a final version of the document in a format in which all changes are accepted, and the document at that point does not need to include any “Track Changes,” redline/strikeout, highlighting, or other indication of additions and deletions to the Standard EJCDC Text.

5.0 LICENSE AGREEMENT

This document is subject to the terms and conditions of the License Agreement, 2018 EJCDC® Construction Series Documents. A copy of the License Agreement was furnished at the time of purchase of this document, and is available for review at www.ejcdc.org and the websites of EJCDC’s sponsoring organizations, and HDR’s ENG MSS portal.
# STANDARD GENERAL CONDITIONS

## OF THE CONSTRUCTION CONTRACT

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STANDARD GENERAL CONDITIONS
OF THE CONSTRUCTION CONTRACT

ARTICLE 1—DEFINITIONS AND TERMINOLOGY

1.01 Defined Terms

A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term’s singular and plural forms, will have the meaning indicated in the definitions below. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.

1. Addenda—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.

2. Agreement—The written instrument, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.

3. Application for Payment—The document prepared by Contractor, in a form acceptable to Engineer, to request progress or final payments, and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

4. Bid—The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

5. Bidder—An individual or entity that submits a Bid to Owner.

6. Bidding Documents—The Bidding Requirements, the proposed Contract Documents, and all Addenda.

7. Bidding Requirements—The Advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.

8. Change Order—A document which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, or other revision to the Contract, issued on or after the Effective Date of the Contract.

9. Change Proposal—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.

10. Claim

   a. A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment of Contract Price or Contract Times; contesting an initial decision by Engineer concerning the
requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer’s decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract.

b. A demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer’s decision regarding a Change Proposal, or seeking resolution of a contractual issue that Engineer has declined to address.

c. A demand or assertion by Owner or Contractor, duly submitted in compliance with the procedural requirements set forth herein, made pursuant to Paragraph 12.01.A.4, concerning disputes arising after Engineer has issued a recommendation of final payment.

d. A demand for money or services by a third party is not a Claim.

11. Constituent of Concern—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), lead-based paint (as defined by the HUD/EPA standard), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to Laws and Regulations regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.

12. Contract—The entire and integrated written contract between Owner and Contractor concerning the Work.

13. Contract Documents—Those items so designated in the Agreement, and which together comprise the Contract.

14. Contract Price—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents.

15. Contract Times—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.

16. Contractor—The individual or entity with which Owner has contracted for performance of the Work.

17. Cost of the Work—See Paragraph 13.01 for definition.

18. Drawings—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.

19. Effective Date of the Contract—The date, indicated in the Agreement, on which the Contract becomes effective.

20. Electronic Document—Any Project-related correspondence, attachments to correspondence, data, documents, drawings, information, or graphics, including but not limited to Shop Drawings and other Submittals, that are in an electronic or digital format.

21. Electronic Means—Electronic mail (email), upload/download from a secure Project website, or other communications methods that allow: (a) the transmission or communication of Electronic Documents; (b) the documentation of transmissions, including sending and receipt; (c) printing of the transmitted Electronic Document by the
recipient; (d) the storage and archiving of the Electronic Document by sender and recipient; and (e) the use by recipient of the Electronic Document for purposes permitted by this Contract. Electronic Means does not include the use of text messaging, or of Facebook, Twitter, Instagram, or similar social media services for transmission of Electronic Documents.

22. **Engineer**—The individual or entity named as such in the Agreement.

23. **Field Order**—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.

24. **Hazardous Environmental Condition**—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto.
   
   a. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated into the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, is not a Hazardous Environmental Condition.
   
   b. The presence of Constituents of Concern that are to be removed or remediated as part of the Work is not a Hazardous Environmental Condition.
   
   c. The presence of Constituents of Concern as part of the routine, anticipated, and obvious working conditions at the Site, is not a Hazardous Environmental Condition.

25. **Laws and Regulations; Laws or Regulations**—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and binding decrees, resolutions, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

26. **Liens**—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.

27. **Milestone**—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date, or by a time prior to Substantial Completion of all the Work.

28. **Notice of Award**—The written notice by Owner to a Bidder of Owner’s acceptance of the Bid.

29. **Notice to Proceed**—A written notice by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work.

30. **Owner**—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.

31. **Progress Schedule**—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising Contractor’s plan to accomplish the Work within the Contract Times.

32. **Project**—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.
33. **Resident Project Representative**—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative (RPR) includes any assistants or field staff of Resident Project Representative.

34. **Samples**—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.

35. **Schedule of Submittals**—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer’s review of the submittals.

36. **Schedule of Values**—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor’s Applications for Payment.

37. **Shop Drawings**—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.

38. **Site**—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements, and such other lands or areas furnished by Owner which are designated for the use of Contractor.

39. **Specifications**—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.

40. **Subcontractor**—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.

41. **Submittal**—A written or graphic document, prepared by or for Contractor, which the Contract Documents require Contractor to submit to Engineer, or that is indicated as a Submittal in the Schedule of Submittals accepted by Engineer. Submittals may include Shop Drawings and Samples; schedules; product data; Owner-delegated designs; sustainable design information; information on special procedures; testing plans; results of tests and evaluations, source quality-control testing and inspections, and field or Site quality-control testing and inspections; warranties and certifications; Suppliers’ instructions and reports; records of delivery of spare parts and tools; operations and maintenance data; Project photographic documentation; record documents; and other such documents required by the Contract Documents. Submittals, whether or not approved or accepted by Engineer, are not Contract Documents. Change Proposals, Change Orders, Claims, notices, Applications for Payment, and requests for interpretation or clarification are not Submittals.

42. **Substantial Completion**—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion of such Work.
43. **Successful Bidder**—The Bidder to which the Owner makes an award of contract.

44. **Supplementary Conditions**—The part of the Contract that amends or supplements these General Conditions.

45. **Supplier**—A manufacturer, fabricator, supplier, distributor, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor.

46. **Technical Data**
   
a. Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (1) existing subsurface conditions at or adjacent to the Site, or existing physical conditions at or adjacent to the Site including existing surface or subsurface structures (except Underground Facilities) or (2) Hazardous Environmental Conditions at the Site.

b. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then Technical Data is defined, with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06, as the data contained in boring logs, recorded measurements of subsurface water levels, assessments of the condition of subsurface facilities, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical, environmental, or other Site or facilities conditions report prepared for the Project and made available to Contractor.

c. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data, and instead Underground Facilities are shown or indicated on the Drawings.

47. **Underground Facilities**—All active or not-in-service underground lines, pipelines, conduits, ducts, encasements, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or systems at the Site, including but not limited to those facilities or systems that produce, transmit, distribute, or convey telephone or other communications, cable television, fiber optic transmissions, power, electricity, light, heat, gases, oil, crude oil products, liquid petroleum products, water, steam, waste, wastewater, storm water, other liquids or chemicals, or traffic or other control systems. An abandoned facility or system is not an Underground Facility.

48. **Unit Price Work**—Work to be paid for on the basis of unit prices.

49. **Work**—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.

50. **Work Change Directive**—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.
1.02 Terminology

A. The words and terms discussed in Paragraphs 1.02.B, C, D, and E are not defined terms that require initial capital letters, but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.

B. Intent of Certain Terms or Adjectives: The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Article 10 or any other provision of the Contract Documents.

C. Day: The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.

D. Defective: The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:

1. does not conform to the Contract Documents;
2. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
3. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 15.03 or Paragraph 15.04).

E. Furnish, Install, Perform, Provide

1. The word “furnish,” when used in connection with services, materials, or equipment, means to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
2. The word “install,” when used in connection with services, materials, or equipment, means to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, means to furnish and install said services, materials, or equipment complete and ready for intended use.
4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words “furnish,” “install,” “perform,” or “provide,” then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.
F. Contract Price or Contract Times: References to a change in “Contract Price or Contract Times” or “Contract Times or Contract Price” or similar, indicate that such change applies to (1) Contract Price, (2) Contract Times, or (3) both Contract Price and Contract Times, as warranted, even if the term “or both” is not expressed.

G. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2—PRELIMINARY MATTERS

2.01 Delivery of Performance and Payment Bonds; Evidence of Insurance

A. Performance and Payment Bonds: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner the performance bond and payment bond (if the Contract requires Contractor to furnish such bonds).

B. Evidence of Contractor’s Insurance: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each additional insured (as identified in the Contract), the certificates, endorsements, and other evidence of insurance required to be provided by Contractor in accordance with Article 6, except to the extent the Supplementary Conditions expressly establish other dates for delivery of specific insurance policies.

C. Evidence of Owner’s Insurance: After receipt of the signed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each additional insured (as identified in the Contract), the certificates and other evidence of insurance required to be provided by Owner under Article 6.

2.02 Copies of Documents

A. Owner shall furnish to Contractor four printed copies of the Contract (including one fully signed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.

B. Owner shall maintain and safeguard at least one original printed record version of the Contract, including Drawings and Specifications signed and sealed by Engineer and other design professionals. Owner shall make such original printed record version of the Contract available to Contractor for review. Owner may delegate the responsibilities under this provision to Engineer.

2.03 Before Starting Construction

A. Preliminary Schedules: Within 10 days after the Effective Date of the Contract (or as otherwise required by the Contract Documents), Contractor shall submit to Engineer for timely review:

1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract;

2. a preliminary Schedule of Submittals; and

3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work
into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.04 Preconstruction Conference; Designation of Authorized Representatives

A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work, and to discuss the schedules referred to in Paragraph 2.03.A, procedures for handling Shop Drawings, Samples, and other Submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records.

B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit and receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.05 Acceptance of Schedules

A. At least 10 days before submission of the first Application for Payment a conference, attended by Contractor, Engineer, and others as appropriate, will be held to review the schedules submitted in accordance with Paragraph 2.03.A. No progress payment will be made to Contractor until acceptable schedules are submitted to Engineer.

1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor’s full responsibility therefor.

2. Contractor’s Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.

3. Contractor’s Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to the component parts of the Work.

4. If a schedule is not acceptable, Contractor will have an additional 10 days to revise and resubmit the schedule.

2.06 Electronic Transmittals

A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may send, and shall accept, Electronic Documents transmitted by Electronic Means.

B. If the Contract does not establish protocols for Electronic Means, then Owner, Engineer, and Contractor shall jointly develop such protocols.

C. Subject to any governing protocols for Electronic Means, when transmitting Electronic Documents by Electronic Means, the transmitting party makes no representations as to long-term compatibility, usability, or readability of the Electronic Documents resulting from the recipient’s use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the Electronic Documents.
ARTICLE 3—CONTRACT DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.01 Intent

A. The Contract Documents are complementary; what is required by one Contract Document is as binding as if required by all.

B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents.

C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic versions of the Contract Documents (including any printed copies derived from such electronic versions) and the printed record version, the printed record version will govern.

D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.

E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.

F. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation will be deemed stricken, and all remaining provisions will continue to be valid and binding upon Owner and Contractor, which agree that the Contract Documents will be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

G. Nothing in the Contract Documents creates:
   1. any contractual relationship between Owner or Engineer and any Subcontractor, Supplier, or other individual or entity performing or furnishing any of the Work, for the benefit of such Subcontractor, Supplier, or other individual or entity; or
   2. any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity, except as may otherwise be required by Laws and Regulations.

3.02 Reference Standards

A. Standards Specifications, Codes, Laws and Regulations

1. Reference in the Contract Documents to standard specifications, manuals, reference standards, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, means the standard specification, manual, reference standard, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.

2. No provision of any such standard specification, manual, reference standard, or code, and no instruction of a Supplier, will be effective to change the duties or responsibilities of Owner, Contractor, or Engineer from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner or Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility
3.03 Reporting and Resolving Discrepancies

A. Reporting Discrepancies

1. Contractor’s Verification of Figures and Field Measurements: Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict, error, ambiguity, or discrepancy is resolved by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract issued pursuant to Paragraph 11.01.

2. Contractor’s Review of Contract Documents: If, before or during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 7.15) until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract issued pursuant to Paragraph 11.01.

3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

B. Resolving Discrepancies

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the part of the Contract Documents prepared by or for Engineer take precedence in resolving any conflict, error, ambiguity, or discrepancy between such provisions of the Contract Documents and:

   a. the provisions of any standard specification, manual, reference standard, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference as a Contract Document); or

   b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 Requirements of the Contract Documents

A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer in writing all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work.
B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer’s written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.

C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly notify Owner and Contractor in writing that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.

3.05 **Reuse of Documents**

A. Contractor and its Subcontractors and Suppliers shall not:

1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media versions, or reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer; or

2. have or acquire any title or ownership rights in any other Contract Documents, reuse any such Contract Documents for any purpose without Owner’s express written consent, or violate any copyrights pertaining to such Contract Documents.

B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein precludes Contractor from retaining copies of the Contract Documents for record purposes.

**ARTICLE 4—COMMENCEMENT AND PROGRESS OF THE WORK**

4.01 **Commencement of Contract Times; Notice to Proceed**

A. The Contract Times will commence to run on the 30th day after the Effective Date of the Contract or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Contract. In no event will the Contract Times commence to run later than the 60th day after the day of Bid opening or the 30th day after the Effective Date of the Contract, whichever date is earlier.

4.02 **Starting the Work**

A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work may be done at the Site prior to such date.

4.03 **Reference Points**

A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer’s judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the
established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.04  Progress Schedule

A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 as it may be adjusted from time to time as provided below.

1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.

2. Proposed adjustments in the Progress Schedule that will change the Contract Times must be submitted in accordance with the requirements of Article 11.

B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work will be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

4.05  Delays in Contractor’s Progress

A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times.

B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.

C. If Contractor’s performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. Such an adjustment will be Contractor’s sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:

1. Severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;

2. Abnormal weather conditions;

3. Acts or failures to act of third-party utility owners or other third-party entities (other than those third-party utility owners or other third-party entities performing other work at or adjacent to the Site as arranged by or under contract with Owner, as contemplated in Article 8); and

4. Acts of war or terrorism.
D. Contractor’s entitlement to an adjustment of Contract Times or Contract Price is limited as follows:

1. Contractor’s entitlement to an adjustment of the Contract Times is conditioned on the delay, disruption, or interference adversely affecting an activity on the critical path to completion of the Work, as of the time of the delay, disruption, or interference.

2. Contractor shall not be entitled to an adjustment in Contract Price for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor. Such a concurrent delay by Contractor shall not preclude an adjustment of Contract Times to which Contractor is otherwise entitled.

3. Adjustments of Contract Times or Contract Price are subject to the provisions of Article 11.

E. Each Contractor request or Change Proposal seeking an increase in Contract Times or Contract Price must be supplemented by supporting data that sets forth in detail the following:

1. The circumstances that form the basis for the requested adjustment;

2. The date upon which each cause of delay, disruption, or interference began to affect the progress of the Work;

3. The date upon which each cause of delay, disruption, or interference ceased to affect the progress of the Work;

4. The number of days’ increase in Contract Times claimed as a consequence of each such cause of delay, disruption, or interference; and

5. The impact on Contract Price, in accordance with the provisions of Paragraph 11.07.

Contractor shall also furnish such additional supporting documentation as Owner or Engineer may require including, where appropriate, a revised progress schedule indicating all the activities affected by the delay, disruption, or interference, and an explanation of the effect of the delay, disruption, or interference on the critical path to completion of the Work.

F. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5, together with the provisions of Paragraphs 4.05.D and 4.05.E.

G. Paragraph 8.03 addresses delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.

ARTICLE 5 —SITE; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

5.01 Availability of Lands

A. Owner shall furnish the Site. Owner shall notify Contractor in writing of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work.
B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which permanent improvements are to be made and Owner’s interest therein as necessary for giving notice of or filing a mechanic’s or construction lien against such lands in accordance with applicable Laws and Regulations.

C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

5.02 Use of Site and Other Areas

A. Limitation on Use of Site and Other Areas

1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor’s operations; (c) damage to any other adjacent land or areas, or to improvements, structures, utilities, or similar facilities located at such adjacent lands or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.

2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.13, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or in a court of competent jurisdiction; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from and against any such claim, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused directly or indirectly, in whole or in part by, or based upon, Contractor’s performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.

B. Removal of Debris During Performance of the Work: During the progress of the Work the Contractor shall keep the Site and other adjacent areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris will conform to applicable Laws and Regulations.

C. Cleaning: Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site and adjacent areas all tools, appliances, construction equipment
and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

D. **Loading of Structures**: Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent structures or land to stresses or pressures that will endanger them.

### 5.03 Subsurface and Physical Conditions

A. **Reports and Drawings**: The Supplementary Conditions identify:

1. Those reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data;

2. Those drawings of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities), that contain Technical Data; and

3. Technical Data contained in such reports and drawings.

B. **Underground Facilities**: Underground Facilities are shown or indicated on the Drawings, pursuant to Paragraph 5.05, and not in the drawings referred to in Paragraph 5.03.A. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data.

C. **Reliance by Contractor on Technical Data**: Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b.

D. **Limitations of Other Data and Documents**: Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:

1. the completeness of such reports and drawings for Contractor’s purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto;

2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings;

3. the contents of other Site-related documents made available to Contractor, such as record drawings from other projects at or adjacent to the Site, or Owner’s archival documents concerning the Site; or

4. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.
5.04  **Differing Subsurface or Physical Conditions**

A.  **Notice by Contractor**: If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site:

1.  is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate;
2.  is of such a nature as to require a change in the Drawings or Specifications;
3.  differs materially from that shown or indicated in the Contract Documents; or
4.  is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.

B.  **Engineer’s Review**: After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine whether it is necessary for Owner to obtain additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor’s resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer’s findings, conclusions, and recommendations.

C.  **Owner’s Statement to Contractor Regarding Site Condition**: After receipt of Engineer’s written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer’s written findings, conclusions, and recommendations, in whole or in part.

D.  **Early Resumption of Work**: If at any time Engineer determines that Work in connection with the subsurface or physical condition in question may resume prior to completion of Engineer’s review or Owner’s issuance of its statement to Contractor, because the condition in question has been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.

E.  **Possible Price and Times Adjustments**

1.  Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in
Contractor’s cost of, or time required for, performance of the Work; subject, however, to the following:

a. Such condition must fall within any one or more of the categories described in Paragraph 5.04.A;

b. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03; and,

c. Contractor’s entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E.

2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:

a. Contractor knew of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise;

b. The existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor’s making such commitment; or

c. Contractor failed to give the written notice required by Paragraph 5.04.A.

3. If Owner and Contractor agree regarding Contractor’s entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, then any such adjustment will be set forth in a Change Order.

4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, no later than 30 days after Owner’s issuance of the Owner’s written statement to Contractor regarding the subsurface or physical condition in question.

F. Underground Facilities; Hazardous Environmental Conditions: Paragraph 5.05 governs rights and responsibilities regarding the presence or location of Underground Facilities. Paragraph 5.06 governs rights and responsibilities regarding Hazardous Environmental Conditions. The provisions of Paragraphs 5.03 and 5.04 are not applicable to the presence or location of Underground Facilities, or to Hazardous Environmental Conditions.

5.05 Underground Facilities

A. Contractor’s Responsibilities: Unless it is otherwise expressly provided in the Supplementary Conditions, the cost of all of the following are included in the Contract Price, and Contractor shall have full responsibility for:

1. reviewing and checking all information and data regarding existing Underground Facilities at the Site;

2. complying with applicable state and local utility damage prevention Laws and Regulations;
3. verifying the actual location of those Underground Facilities shown or indicated in the Contract Documents as being within the area affected by the Work, by exposing such Underground Facilities during the course of construction;

4. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and

5. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.

B. **Notice by Contractor:** If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated on the Drawings, or was not shown or indicated on the Drawings with reasonable accuracy, then Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing regarding such Underground Facility.

C. **Engineer’s Review:** Engineer will:

1. promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated on the Drawings, or was not shown or indicated with reasonable accuracy;

2. identify and communicate with the owner of the Underground Facility; prepare recommendations to Owner (and if necessary issue any preliminary instructions to Contractor) regarding the Contractor’s resumption of Work in connection with the Underground Facility in question;

3. obtain any pertinent cost or schedule information from Contractor; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and

4. advise Owner in writing of Engineer’s findings, conclusions, and recommendations.

During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

D. **Owner’s Statement to Contractor Regarding Underground Facility:** After receipt of Engineer’s written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer’s written findings, conclusions, and recommendations in whole or in part.

E. **Early Resumption of Work:** If at any time Engineer determines that Work in connection with the Underground Facility may resume prior to completion of Engineer’s review or Owner’s issuance of its statement to Contractor, because the Underground Facility in question and conditions affected by its presence have been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.

F. **Possible Price and Times Adjustments**

1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, to the extent that any existing Underground Facility at the Site that was not shown
or indicated on the Drawings, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor’s cost of, or time required for, performance of the Work; subject, however, to the following:

a. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03;
b. Contractor’s entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E; and
c. Contractor gave the notice required in Paragraph 5.05.B.

2. If Owner and Contractor agree regarding Contractor’s entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, then any such adjustment will be set forth in a Change Order.

3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, no later than 30 days after Owner’s issuance of the Owner’s written statement to Contractor regarding the Underground Facility in question.

4. The information and data shown or indicated on the Drawings with respect to existing Underground Facilities at the Site is based on information and data (a) furnished by the owners of such Underground Facilities, or by others, (b) obtained from available records, or (c) gathered in an investigation conducted in accordance with the current edition of ASCE 38, Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data, by the American Society of Civil Engineers. If such information or data is incorrect or incomplete, Contractor’s remedies are limited to those set forth in this Paragraph 5.05.F.

5.06 Hazardous Environmental Conditions at Site

A. Reports and Drawings: The Supplementary Conditions identify:

1. those reports known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site;
2. drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and
3. Technical Data contained in such reports and drawings.

B. Reliance by Contractor on Technical Data Authorized: Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:

1. the completeness of such reports and drawings for Contractor’s purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures
of construction to be employed by Contractor, and safety precautions and programs incident thereto;

2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or

3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions or information.

C. Contractor shall not be responsible for removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.

D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.

E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.

F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.

G. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, as a result of such Work stoppage, such special conditions under which Work is agreed to be resumed by Contractor, or any costs or expenses incurred in response to the Hazardous Environmental Condition, then within 30 days of Owner’s written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off. Entitlement to any such adjustment is subject to the provisions of Paragraphs 4.05.D, 4.05.E, 11.07, and 11.08.

H. If, after receipt of such written notice, Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special
conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner’s own forces or others in accordance with Article 8.

I. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court, arbitration, or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.I obligates Owner to indemnify any individual or entity from and against the consequences of that individual’s or entity’s own negligence.

J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.J obligates Contractor to indemnify any individual or entity from and against the consequences of that individual’s or entity’s own negligence.

K. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 6—BONDS AND INSURANCE

6.01 Performance, Payment, and Other Bonds

A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of Contractor’s obligations under the Contract. These bonds must remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the terms of a prescribed bond form, the Supplementary Conditions, or other provisions of the Contract.

B. Contractor shall also furnish such other bonds (if any) as are required by the Supplementary Conditions or other provisions of the Contract.

C. All bonds must be in the form included in the Bidding Documents or otherwise specified by Owner prior to execution of the Contract, except as provided otherwise by Laws or Regulations.
Regulations, and must be issued and signed by a surety named in “Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies” as published in Department Circular 570 (as amended and supplemented) by the Bureau of the Fiscal Service, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual’s authority to bind the surety. The evidence of authority must show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.

D. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue bonds in the required amounts.

E. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer in writing and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which must comply with the bond and surety requirements above.

F. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner’s termination rights under Article 16.

G. Upon request to Owner from any Subcontractor, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Owner shall provide a copy of the payment bond to such person or entity.

H. Upon request to Contractor from any Subcontractor, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Contractor shall provide a copy of the payment bond to such person or entity.

6.02 Insurance—General Provisions

A. Owner and Contractor shall obtain and maintain insurance as required in this article and in the Supplementary Conditions.

B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized in the state or jurisdiction in which the Project is located to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.

C. Alternative forms of insurance coverage, including but not limited to self-insurance and “Occupational Accident and Excess Employer’s Indemnity Policies,” are not sufficient to meet the insurance requirements of this Contract, unless expressly allowed in the Supplementary Conditions.

D. Contractor shall deliver to Owner, with copies to each additional insured identified in the Contract, certificates of insurance and endorsements establishing that Contractor has obtained and is maintaining the policies and coverages required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies, documentation of applicable self-insured retentions (if allowed) and deductibles, full disclosure of all relevant exclusions, and evidence of insurance required to be purchased and maintained by
Subcontractors or Suppliers. In any documentation furnished under this provision, Contractor, Subcontractors, and Suppliers may block out (redact) (1) any confidential premium or pricing information and (2) any wording specific to a project or jurisdiction other than those applicable to this Contract.

E. Owner shall deliver to Contractor, with copies to each additional insured identified in the Contract, certificates of insurance and endorsements establishing that Owner has obtained and is maintaining the policies and coverages required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies, documentation of applicable self-insured retentions (if allowed) and deductibles, and full disclosure of all relevant exclusions. In any documentation furnished under this provision, Owner may block out (redact) (1) any confidential premium or pricing information and (2) any wording specific to a project or jurisdiction other than those relevant to this Contract.

F. Failure of Owner or Contractor to demand such certificates or other evidence of the other party’s full compliance with these insurance requirements, or failure of Owner or Contractor to identify a deficiency in compliance from the evidence provided, will not be construed as a waiver of the other party’s obligation to obtain and maintain such insurance.

G. In addition to the liability insurance required to be provided by Contractor, the Owner, at Owner’s option, may purchase and maintain Owner’s own liability insurance. Owner’s liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner’s liability policies for any of Contractor’s obligations to the Owner, Engineer, or third parties.

H. Contractor shall require:

1. Subcontractors to purchase and maintain worker’s compensation, commercial general liability, and other insurance that is appropriate for their participation in the Project, and to name as additional insureds Owner and Engineer (and any other individuals or entities identified in the Supplementary Conditions as additional insureds on Contractor’s liability policies) on each Subcontractor’s commercial general liability insurance policy; and

2. Suppliers to purchase and maintain insurance that is appropriate for their participation in the Project.

I. If either party does not purchase or maintain the insurance required of such party by the Contract, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage.

J. If Contractor has failed to obtain and maintain required insurance, Contractor’s entitlement to enter or remain at the Site will end immediately, and Owner may impose an appropriate set-off against payment for any associated costs (including but not limited to the cost of purchasing necessary insurance coverage), and exercise Owner’s termination rights under Article 16.

K. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect (but is in no way obligated) to obtain equivalent insurance to protect such other party’s interests at the expense of the party who was required to provide such coverage, and the Contract Price will be adjusted accordingly.
L. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor’s interests. Contractor is responsible for determining whether such coverage and limits are adequate to protect its interests, and for obtaining and maintaining any additional insurance that Contractor deems necessary.

M. The insurance and insurance limits required herein will not be deemed as a limitation on Contractor’s liability, or that of its Subcontractors or Suppliers, under the indemnities granted to Owner and other individuals and entities in the Contract or otherwise.

N. All the policies of insurance required to be purchased and maintained under this Contract will contain a provision or endorsement that the coverage afforded will not be canceled, or renewal refused, until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured and Engineer.

6.03 Contractor’s Insurance

A. Required Insurance: Contractor shall purchase and maintain Worker’s Compensation, Commercial General Liability, and other insurance pursuant to the specific requirements of the Supplementary Conditions.

B. General Provisions: The policies of insurance required by this Paragraph 6.03 as supplemented must:

1. include at least the specific coverages required;

2. be written for not less than the limits provided, or those required by Laws or Regulations, whichever is greater;

3. remain in effect at least until the Work is complete (as set forth in Paragraph 15.06.D), and longer if expressly required elsewhere in this Contract, and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract;

4. apply with respect to the performance of the Work, whether such performance is by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable; and

5. include all necessary endorsements to support the stated requirements.

C. Additional Insureds: The Contractor’s commercial general liability, automobile liability, employer’s liability, umbrella or excess, pollution liability, and unmanned aerial vehicle liability policies, if required by this Contract, must:

1. include and list as additional insureds Owner and Engineer, and any individuals or entities identified as additional insureds in the Supplementary Conditions;

2. include coverage for the respective officers, directors, members, partners, employees, and consultants of all such additional insureds;

3. afford primary coverage to these additional insureds for all claims covered thereby (including as applicable those arising from both ongoing and completed operations);
4. not seek contribution from insurance maintained by the additional insured; and
5. as to commercial general liability insurance, apply to additional insureds with respect to liability caused in whole or in part by Contractor’s acts or omissions, or the acts and omissions of those working on Contractor’s behalf, in the performance of Contractor’s operations.

### 6.04 Builder’s Risk and Other Property Insurance

A. **Builder’s Risk:** Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder’s risk insurance upon the Work on a completed value basis, in the amount of the Work’s full insurable replacement cost (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). The specific requirements applicable to the builder’s risk insurance are set forth in the Supplementary Conditions.

B. **Property Insurance for Facilities of Owner Where Work Will Occur:** Owner is responsible for obtaining and maintaining property insurance covering each existing structure, building, or facility in which any part of the Work will occur, or to which any part of the Work will attach or be adjoined. Such property insurance will be written on a special perils (all-risk) form, on a replacement cost basis, providing coverage consistent with that required for the builder’s risk insurance, and will be maintained until the Work is complete, as set forth in Paragraph 15.06.D.

C. **Property Insurance for Substantially Complete Facilities:** Promptly after Substantial Completion, and before actual occupancy or use of the substantially completed Work, Owner will obtain property insurance for such substantially completed Work, and maintain such property insurance at least until the Work is complete, as set forth in Paragraph 15.06.D. Such property insurance will be written on a special perils (all-risk) form, on a replacement cost basis, and provide coverage consistent with that required for the builder’s risk insurance. The builder’s risk insurance may terminate upon written confirmation of Owner’s procurement of such property insurance.

D. **Partial Occupancy or Use by Owner:** If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work, as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder’s risk policy, or through Contractor) will provide advance notice of such occupancy or use to the builder’s risk insurer, and obtain an endorsement consenting to the continuation of coverage prior to commencing such partial occupancy or use.

E. **Insurance of Other Property; Additional Insurance:** If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, then the entity or individual owning such property item will be responsible for insuring it. If Contractor elects to obtain other special insurance to be included in or supplement the builder’s risk or property insurance policies provided under this Paragraph 6.04, it may do so at Contractor’s expense.

### 6.05 Property Losses; Subrogation

A. The builder’s risk insurance policy purchased and maintained in accordance with Paragraph 6.04 (or an installation floater policy if authorized by the Supplementary Conditions), will contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any insureds thereunder, or against
Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors.

1. Owner and Contractor waive all rights against each other and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils, risks, or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Engineer, its consultants, all individuals or entities identified in the Supplementary Conditions as builder’s risk or installation floater insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused.

2. None of the above waivers extends to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.

B. Any property insurance policy maintained by Owner covering any loss, damage, or consequential loss to Owner’s existing structures, buildings, or facilities in which any part of the Work will occur, or to which any part of the Work will attach or adjoin; to adjacent structures, buildings, or facilities of Owner; or to part or all of the completed or substantially completed Work, during partial occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06, will contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any insureds thereunder, or against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them, and that the insured is allowed to waive the insurer’s rights of subrogation in a written contract executed prior to the loss, damage, or consequential loss.

1. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from fire or any of the perils, risks, or causes of loss covered by builder’s risk insurance, installation floater, and any other property insurance applicable to the Work.

C. The waivers in this Paragraph 6.05 include the waiver of rights due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner’s property or the Work caused by, arising out of, or resulting from fire or other insured peril, risk, or cause of loss.

D. Contractor shall be responsible for assuring that each Subcontract contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, relating to, or resulting from fire or other peril, risk, or cause of loss covered by builder’s risk insurance, installation floater, and any other property insurance applicable to the Work.
6.06 **Receipt and Application of Property Insurance Proceeds**

A. Any insured loss under the builder’s risk and other policies of property insurance required by Paragraph 6.04 will be adjusted and settled with the named insured that purchased the policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.

B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder’s risk and other policies of insurance required by Paragraph 6.04 shall maintain such proceeds in a segregated account, and distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.

C. If no other special agreement is reached, Contractor shall repair or replace the damaged Work, using allocated insurance proceeds.

**ARTICLE 7—CONTRACTOR’S RESPONSIBILITIES**

7.01 **Contractor’s Means and Methods of Construction**

A. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.

B. If the Contract Documents note, or Contractor determines, that professional engineering or other design services are needed to carry out Contractor’s responsibilities for construction means, methods, techniques, sequences, and procedures, or for Site safety, then Contractor shall cause such services to be provided by a properly licensed design professional, at Contractor’s expense. Such services are not Owner-delegated professional design services under this Contract, and neither Owner nor Engineer has any responsibility with respect to (1) Contractor’s determination of the need for such services, (2) the qualifications or licensing of the design professionals retained or employed by Contractor, (3) the performance of such services, or (4) any errors, omissions, or defects in such services.

7.02 **Supervision and Superintendence**

A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents.

B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who will not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

7.03 **Labor; Working Hours**

A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall maintain good discipline and order at the Site.
B. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of Contractor’s employees; of Suppliers and Subcontractors, and their employees; and of any other individuals or entities performing or furnishing any of the Work, just as Contractor is responsible for Contractor’s own acts and omissions.

C. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site will be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner’s written consent, which will not be unreasonably withheld.

7.04 Services, Materials, and Equipment

A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.

B. All materials and equipment incorporated into the Work must be new and of good quality, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications will expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

C. All materials and equipment must be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

7.05 “Or Equals”

A. Contractor’s Request; Governing Criteria: Whenever an item of equipment or material is specified or described in the Contract Documents by using the names of one or more proprietary items or specific Suppliers, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or “or equal” item is permitted, Contractor may request that Engineer authorize the use of other items of equipment or material, or items from other proposed Suppliers, under the circumstances described below.

1. If Engineer in its sole discretion determines that an item of equipment or material proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer will deem it an “or equal” item. For the purposes of this paragraph, a proposed item of equipment or material will be considered functionally equal to an item so named if:
   a. in the exercise of reasonable judgment Engineer determines that the proposed item:
      1) is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;
2) will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;

3) has a proven record of performance and availability of responsive service; and

4) is not objectionable to Owner.

b. Contractor certifies that, if the proposed item is approved and incorporated into the Work:

1) there will be no increase in cost to the Owner or increase in Contract Times; and

2) the item will conform substantially to the detailed requirements of the item named in the Contract Documents.

B. Contractor’s Expense: Contractor shall provide all data in support of any proposed “or equal” item at Contractor’s expense.

C. Engineer’s Evaluation and Determination: Engineer will be allowed a reasonable time to evaluate each “or-equal” request. Engineer may require Contractor to furnish additional data about the proposed “or-equal” item. Engineer will be the sole judge of acceptability. No “or-equal” item will be ordered, furnished, installed, or utilized until Engineer’s review is complete and Engineer determines that the proposed item is an “or-equal,” which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.

D. Effect of Engineer’s Determination: Neither approval nor denial of an “or-equal” request will result in any change in Contract Price. The Engineer’s denial of an “or-equal” request will be final and binding, and may not be reversed through an appeal under any provision of the Contract.

E. Treatment as a Substitution Request: If Engineer determines that an item of equipment or material proposed by Contractor does not qualify as an “or-equal” item, Contractor may request that Engineer consider the item a proposed substitute pursuant to Paragraph 7.06.

7.06 Substitutes

A. Contractor’s Request; Governing Criteria: Unless the specification or description of an item of equipment or material required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of equipment or material under the circumstances described below. To the extent possible such requests must be made before commencement of related construction at the Site.

1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of equipment or material from anyone other than Contractor.

2. The requirements for review by Engineer will be as set forth in Paragraph 7.06.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.
3. Contractor shall make written application to Engineer for review of a proposed substitute item of equipment or material that Contractor seeks to furnish or use. The application:

   a. will certify that the proposed substitute item will:
      1) perform adequately the functions and achieve the results called for by the general design;
      2) be similar in substance to the item specified; and
      3) be suited to the same use as the item specified.

   b. will state:
      1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times;
      2) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item; and
      3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.

   c. will identify:
      1) all variations of the proposed substitute item from the item specified; and
      2) available engineering, sales, maintenance, repair, and replacement services.

   d. will contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.

B. Engineer’s Evaluation and Determination: Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer’s review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer’s determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.

C. Special Guarantee: Owner may require Contractor to furnish at Contractor’s expense a special performance guarantee or other surety with respect to any substitute.

D. Reimbursement of Engineer’s Cost: Engineer will record Engineer’s costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.
E. **Contractor’s Expense**: Contractor shall provide all data in support of any proposed substitute at Contractor’s expense.

F. **Effect of Engineer’s Determination**: If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer’s denial of a substitution request will be final and binding, and may not be reversed through an appeal under any provision of the Contract. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.06.D, by timely submittal of a Change Proposal.

7.07 **Concerning Subcontractors and Suppliers**

A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner. The Contractor’s retention of a Subcontractor or Supplier for the performance of parts of the Work will not relieve Contractor’s obligation to Owner to perform and complete the Work in accordance with the Contract Documents.

B. Contractor shall retain specific Subcontractors and Suppliers for the performance of designated parts of the Work if required by the Contract to do so.

C. Subsequent to the submittal of Contractor’s Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor or Supplier to furnish or perform any of the Work against which Contractor has reasonable objection.

D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within 5 days.

E. Owner may require the replacement of any Subcontractor or Supplier. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors or Suppliers for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor or Supplier so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor or Supplier.

F. If Owner requires the replacement of any Subcontractor or Supplier retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner’s requirement of replacement.

G. No acceptance by Owner of any such Subcontractor or Supplier, whether initially or as a replacement, will constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.
H. On a monthly basis, Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.

I. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors and Suppliers.

J. The divisions and sections of the Specifications and the identifications of any Drawings do not control Contractor in dividing the Work among Subcontractors or Suppliers, or in delineating the Work to be performed by any specific trade.

K. All Work performed for Contractor by a Subcontractor or Supplier must be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract for the benefit of Owner and Engineer.

L. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor for Work performed for Contractor by the Subcontractor or Supplier.

M. Contractor shall restrict all Subcontractors and Suppliers from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed in this Contract.

7.08 Patent Fees and Royalties

A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If an invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights will be disclosed in the Contract Documents.

B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.

C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.
7.09  **Permits**

A. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all construction permits, licenses, and certificates of occupancy. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of the submission of Contractor’s Bid (or when Contractor became bound under a negotiated contract). Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

7.10  **Taxes**

A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

7.11  **Laws and Regulations**

A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Neither Owner nor Engineer shall be responsible for monitoring Contractor’s compliance with any Laws or Regulations.

B. If Contractor performs any Work or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all resulting costs and losses, and shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work or other action. It is not Contractor’s responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this does not relieve Contractor of its obligations under Paragraph 3.03.

C. Owner or Contractor may give written notice to the other party of any changes after the submission of Contractor’s Bid (or after the date when Contractor became bound under a negotiated contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times resulting from such changes, then within 30 days of such written notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

7.12  **Record Documents**

A. Contractor shall maintain in a safe place at the Site one printed record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, written interpretations and clarifications, and approved Shop Drawings. Contractor shall keep such record documents in good order and annotate them to show changes made during construction. These record documents, together with all approved Samples, will be available to Engineer for reference. Upon completion of the Work, Contractor shall deliver these record documents to Engineer.
7.13 **Safety and Protection**

A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations.

B. Contractor shall designate a qualified and experienced safety representative whose duties and responsibilities are the prevention of Work-related accidents and the maintenance and supervision of safety precautions and programs.

C. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:
   1. all persons on the Site or who may be affected by the Work;
   2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
   3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, other work in progress, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.

D. All damage, injury, or loss to any property referred to in Paragraph 7.13.C.2 or 7.13.C.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).

E. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection.

F. Contractor shall notify Owner; the owners of adjacent property; the owners of Underground Facilities and other utilities (if the identity of such owners is known to Contractor); and other contractors and utility owners performing work at or adjacent to the Site, in writing, when Contractor knows that prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.

G. Contractor shall comply with the applicable requirements of Owner’s safety programs, if any. Any Owner’s safety programs that are applicable to the Work are identified or included in the Supplementary Conditions or Specifications.

H. Contractor shall inform Owner and Engineer of the specific requirements of Contractor’s safety program with which Owner’s and Engineer’s employees and representatives must comply while at the Site.
I. Contractor’s duties and responsibilities for safety and protection will continue until all the Work is completed, Engineer has issued a written notice to Owner and Contractor in accordance with Paragraph 15.06.C that the Work is acceptable, and Contractor has left the Site (except as otherwise expressly provided in connection with Substantial Completion).

J. Contractor’s duties and responsibilities for safety and protection will resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

7.14 Hazard Communication Programs

A. Contractor shall be responsible for coordinating any exchange of safety data sheets (formerly known as material safety data sheets) or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

7.15 Emergencies

A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused by an emergency, or are required as a result of Contractor’s response to an emergency. If Engineer determines that a change in the Contract Documents is required because of an emergency or Contractor’s response, a Work Change Directive or Change Order will be issued.

7.16 Submittals

A. Shop Drawing and Sample Requirements

1. Before submitting a Shop Drawing or Sample, Contractor shall:

   a. review and coordinate the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;

   b. determine and verify:

       1) all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect to the Submittal;

       2) the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and

       3) all information relative to Contractor’s responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto;

   c. confirm that the Submittal is complete with respect to all related data included in the Submittal.

2. Each Shop Drawing or Sample must bear a stamp or specific written certification that Contractor has satisfied Contractor’s obligations under the Contract Documents with respect to Contractor’s review of that Submittal, and that Contractor approves the Submittal.
3. With each Shop Drawing or Sample, Contractor shall give Engineer specific written notice of any variations that the Submittal may have from the requirements of the Contract Documents. This notice must be set forth in a written communication separate from the Submittal; and, in addition, in the case of a Shop Drawing by a specific notation made on the Shop Drawing itself.

B. Submission Procedures for Shop Drawings and Samples: Contractor shall label and submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals.

1. Shop Drawings
   a. Contractor shall submit the number of copies required in the Specifications.
   b. Data shown on the Shop Drawings must be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide, and to enable Engineer to review the information for the limited purposes required by Paragraph 7.16.C.

2. Samples
   a. Contractor shall submit the number of Samples required in the Specifications.
   b. Contractor shall clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the Submittal for the limited purposes required by Paragraph 7.16.C.

3. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer’s review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.

C. Engineer’s Review of Shop Drawings and Samples

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the accepted Schedule of Submittals. Engineer’s review and approval will be only to determine if the items covered by the Submittals will, after installation or incorporation in the Work, comply with the requirements of the Contract Documents, and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

2. Engineer’s review and approval will not extend to means, methods, techniques, sequences, or procedures of construction, or to safety precautions or programs incident thereto.

3. Engineer’s review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

4. Engineer’s review and approval of a Shop Drawing or Sample will not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will
document any such approved variation from the requirements of the Contract Documents in a Field Order or other appropriate Contract modification.

5. Engineer’s review and approval of a Shop Drawing or Sample will not relieve Contractor from responsibility for complying with the requirements of Paragraphs 7.16.A and B.

6. Engineer’s review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, will not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.

7. Neither Engineer’s receipt, review, acceptance, or approval of a Shop Drawing or Sample will result in such item becoming a Contract Document.

8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.C.4.

D. Resubmittal Procedures for Shop Drawings and Samples

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous Submittals.

2. Contractor shall furnish required Shop Drawing and Sample submittals with sufficient information and accuracy to obtain required approval of an item with no more than two resubmittals. Engineer will record Engineer’s time for reviewing a third or subsequent resubmittal of a Shop Drawing or Sample, and Contractor shall be responsible for Engineer’s charges to Owner for such time. Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges.

3. If Contractor requests a change of a previously approved Shop Drawing or Sample, Contractor shall be responsible for Engineer’s charges to Owner for its review time, and Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

E. Submittals Other than Shop Drawings, Samples, and Owner-Delegated Designs

1. The following provisions apply to all Submittals other than Shop Drawings, Samples, and Owner-delegated designs:

   a. Contractor shall submit all such Submittals to the Engineer in accordance with the Schedule of Submittals and pursuant to the applicable terms of the Contract Documents.

   b. Engineer will provide timely review of all such Submittals in accordance with the Schedule of Submittals and return such Submittals with a notation of either Accepted or Not Accepted. Any such Submittal that is not returned within the time established in the Schedule of Submittals will be deemed accepted.

   c. Engineer’s review will be only to determine if the Submittal is acceptable under the requirements of the Contract Documents as to general form and content of the Submittal.
d. If any such Submittal is not accepted, Contractor shall confer with Engineer regarding the reason for the non-acceptance, and resubmit an acceptable document.

2. Procedures for the submittal and acceptance of the Progress Schedule, the Schedule of Submittals, and the Schedule of Values are set forth in Paragraphs 2.03, 2.04, and 2.05.

F. Owner-delegated Designs: Submittals pursuant to Owner-delegated designs are governed by the provisions of Paragraph 7.19.

7.17 Contractor’s General Warranty and Guarantee

A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer is entitled to rely on Contractor’s warranty and guarantee.

B. Owner’s rights under this warranty and guarantee are in addition to, and are not limited by, Owner’s rights under the correction period provisions of Paragraph 15.08. The time in which Owner may enforce its warranty and guarantee rights under this Paragraph 7.17 is limited only by applicable Laws and Regulations restricting actions to enforce such rights; provided, however, that after the end of the correction period under Paragraph 15.08:

1. Owner shall give Contractor written notice of any defective Work within 60 days of the discovery that such Work is defective; and

2. Such notice will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the notice.

C. Contractor’s warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, or improper modification, maintenance, or operation, by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or

2. normal wear and tear under normal usage.

D. Contractor’s obligation to perform and complete the Work in accordance with the Contract Documents is absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents, a release of Contractor’s obligation to perform the Work in accordance with the Contract Documents, or a release of Owner’s warranty and guarantee rights under this Paragraph 7.17:

1. Observations by Engineer;

2. Recommendation by Engineer or payment by Owner of any progress or final payment;

3. The issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;

4. Use or occupancy of the Work or any part thereof by Owner;

5. Any review and approval of a Shop Drawing or Sample submittal;

6. The issuance of a notice of acceptability by Engineer;

7. The end of the correction period established in Paragraph 15.08;

8. Any inspection, test, or approval by others; or
9. Any correction of defective Work by Owner.

E. If the Contract requires the Contractor to accept the assignment of a contract entered into by Owner, then the specific warranties, guarantees, and correction obligations contained in the assigned contract will govern with respect to Contractor’s performance obligations to Owner for the Work described in the assigned contract.

7.18 Indemnification

A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from losses, damages, costs, and judgments (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising from third-party claims or actions relating to or resulting from the performance or furnishing of the Work, provided that any such claim, action, loss, cost, judgment or damage is attributable to bodily injury, sickness, disease, or death, or to damage to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom, but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable.

B. In any and all claims against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.18.A will not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers’ compensation acts, disability benefit acts, or other employee benefit acts.

7.19 Delegation of Professional Design Services

A. Owner may require Contractor to provide professional design services for a portion of the Work by express delegation in the Contract Documents. Such delegation will specify the performance and design criteria that such services must satisfy, and the Submittals that Contractor must furnish to Engineer with respect to the Owner-delegated design.

B. Contractor shall cause such Owner-delegated professional design services to be provided pursuant to the professional standard of care by a properly licensed design professional, whose signature and seal must appear on all drawings, calculations, specifications, certifications, and Submittals prepared by such design professional. Such design professional must issue all certifications of design required by Laws and Regulations.

C. If a Shop Drawing or other Submittal related to the Owner-delegated design is prepared by Contractor, a Subcontractor, or others for submittal to Engineer, then such Shop Drawing or other Submittal must bear the written approval of Contractor’s design professional when submitted by Contractor to Engineer.
D. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, and approvals performed or provided by the design professionals retained or employed by Contractor under an Owner-delegated design, subject to the professional standard of care and the performance and design criteria stated in the Contract Documents.

E. Pursuant to this Paragraph 7.19, Engineer’s review, approval, and other determinations regarding design drawings, calculations, specifications, certifications, and other Submittals furnished by Contractor pursuant to an Owner-delegated design will be only for the following limited purposes:

1. Checking for conformance with the requirements of this Paragraph 7.19;
2. Confirming that Contractor (through its design professionals) has used the performance and design criteria specified in the Contract Documents; and
3. Establishing that the design furnished by Contractor is consistent with the design concept expressed in the Contract Documents.

F. Contractor shall not be responsible for the adequacy of performance or design criteria specified by Owner or Engineer.

G. Contractor is not required to provide professional services in violation of applicable Laws and Regulations.

ARTICLE 8—OTHER WORK AT THE SITE

8.01 Other Work

A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner’s employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.

B. If Owner performs other work at or adjacent to the Site with Owner’s employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any third-party utility work that Owner has arranged to take place at or adjacent to the Site, Owner shall provide such information to Contractor.

C. Contractor shall afford proper and safe access to the Site to each contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner’s employees, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work.

D. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others’ work with the written consent of Engineer and the others whose work will be affected.
E. If the proper execution or results of any part of Contractor’s Work depends upon work performed by others, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor’s Work. Contractor’s failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor’s Work except for latent defects and deficiencies in such other work.

F. The provisions of this article are not applicable to work that is performed by third-party utilities or other third-party entities without a contract with Owner, or that is performed without having been arranged by Owner. If such work occurs, then any related delay, disruption, or interference incurred by Contractor is governed by the provisions of Paragraph 4.05.C.3.

8.02 Coordination

A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner’s employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be set forth in the Supplementary Conditions or provided to Contractor prior to the start of any such other work:

1. The identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;

2. An itemization of the specific matters to be covered by such authority and responsibility; and

3. The extent of such authority and responsibilities.

B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

8.03 Legal Relationships

A. If, in the course of performing other work for Owner at or adjacent to the Site, the Owner’s employees, any other contractor working for Owner, or any utility owner that Owner has arranged to perform work, causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment will take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract, and any remedies available to Contractor under Laws or Regulations concerning utility action or inaction. When applicable, any such equitable adjustment in Contract Price will be conditioned on Contractor assigning to Owner all Contractor’s rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor’s entitlement to an adjustment of the Contract Times or Contract Price is subject to the provisions of Paragraphs 4.05.D and 4.05.E.
B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site.

1. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due Contractor, and assign to such other contractor or utility owner the Owner’s contractual rights against Contractor with respect to the breach of the obligations set forth in this Paragraph 8.03.B.

2. When Owner is performing other work at or adjacent to the Site with Owner’s employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor’s failure to take reasonable and customary measures with respect to Owner’s other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due Contractor.

C. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor’s failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor’s actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claims, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such damage, delay, disruption, or interference.

ARTICLE 9—OWNER’S RESPONSIBILITIES

9.01 Communications to Contractor
   A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

9.02 Replacement of Engineer
   A. Owner may at its discretion appoint an engineer to replace Engineer, provided Contractor makes no reasonable objection to the replacement engineer. The replacement engineer’s status under the Contract Documents will be that of the former Engineer.

9.03 Furnish Data
   A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

9.04 Pay When Due
   A. Owner shall make payments to Contractor when they are due as provided in the Agreement.
9.05 Lands and Easements; Reports, Tests, and Drawings
   A. Owner’s duties with respect to providing lands and easements are set forth in Paragraph 5.01.
   B. Owner’s duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.
   C. Article 5 refers to Owner’s identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

9.06 Insurance
   A. Owner’s responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 6.

9.07 Change Orders
   A. Owner’s responsibilities with respect to Change Orders are set forth in Article 11.

9.08 Inspections, Tests, and Approvals
   A. Owner’s responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 14.02.B.

9.09 Limitations on Owner’s Responsibilities
   A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor’s means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor’s failure to perform the Work in accordance with the Contract Documents.

9.10 Undisclosed Hazardous Environmental Condition
   A. Owner’s responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 5.06.

9.11 Evidence of Financial Arrangements
   A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner’s obligations under the Contract (including obligations under proposed changes in the Work).

9.12 Safety Programs
   A. While at the Site, Owner’s employees and representatives shall comply with the specific applicable requirements of Contractor’s safety programs of which Owner has been informed.
   B. Owner shall furnish copies of any applicable Owner safety programs to Contractor.
ARTICLE 10—ENGINEER’S STATUS DURING CONSTRUCTION

10.01 Owner’s Representative
   A. Engineer will be Owner’s representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner’s representative during construction are set forth in the Contract.

10.02 Visits to Site
   A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe, as an experienced and qualified design professional, the progress that has been made and the quality of the various aspects of Contractor’s executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer’s efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.

   B. Engineer’s visits and observations are subject to all the limitations on Engineer’s authority and responsibility set forth in Paragraph 10.07. Particularly, but without limitation, during or as a result of Engineer’s visits or observations of Contractor’s Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor’s means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

10.03 Resident Project Representative
   A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in the Supplementary Conditions and in Paragraph 10.07.

   B. If Owner designates an individual or entity who is not Engineer’s consultant, agent, or employee to represent Owner at the Site, then the responsibilities and authority of such individual or entity will be as provided in the Supplementary Conditions.

10.04 Engineer’s Authority
   A. Engineer has the authority to reject Work in accordance with Article 14.

   B. Engineer’s authority as to Submittals is set forth in Paragraph 7.16.

   C. Engineer’s authority as to design drawings, calculations, specifications, certifications and other Submittals from Contractor in response to Owner’s delegation (if any) to Contractor of professional design services, is set forth in Paragraph 7.19.

   D. Engineer’s authority as to changes in the Work is set forth in Article 11.
E. Engineer’s authority as to Applications for Payment is set forth in Article 15.

10.05 Determinations for Unit Price Work

A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor as set forth in Paragraph 13.03.

10.06 Decisions on Requirements of Contract Documents and Acceptability of Work

A. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.

10.07 Limitations on Engineer’s Authority and Responsibilities

A. Neither Engineer’s authority or responsibility under this Article 10 or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, will create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor’s means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor’s failure to perform the Work in accordance with the Contract Documents.

C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. Engineer’s review of the final Application for Payment and accompanying documentation, and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Contractor under Paragraph 15.06.A, will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals, that the results certified indicate compliance with the Contract Documents.

E. The limitations upon authority and responsibility set forth in this Paragraph 10.07 also apply to the Resident Project Representative, if any.

10.08 Compliance with Safety Program

A. While at the Site, Engineer’s employees and representatives will comply with the specific applicable requirements of Owner’s and Contractor’s safety programs of which Engineer has been informed.
ARTICLE 11—CHANGES TO THE CONTRACT

11.01 Amending and Supplementing the Contract

A. The Contract may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.

B. If an amendment or supplement to the Contract includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order.

C. All changes to the Contract that involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, must be supported by Engineer’s recommendation. Owner and Contractor may amend other terms and conditions of the Contract without the recommendation of the Engineer.

11.02 Change Orders

A. Owner and Contractor shall execute appropriate Change Orders covering:

1. Changes in Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;

2. Changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;

3. Changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.05, (b) required because of Owner’s acceptance of defective Work under Paragraph 14.04 or Owner’s correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer’s recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters; and

4. Changes that embody the substance of any final and binding results under: Paragraph 11.03.B, resolving the impact of a Work Change Directive; Paragraph 11.09, concerning Change Proposals; Article 12, Claims; Paragraph 13.02.D, final adjustments resulting from allowances; Paragraph 13.03.D, final adjustments relating to determination of quantities for Unit Price Work; and similar provisions.

B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of Paragraph 11.02.A, it will be deemed to be of full force and effect, as if fully executed.

11.03 Work Change Directives

A. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive’s effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.07 regarding change of Contract Price.
B. If Owner has issued a Work Change Directive and:

1. Contractor believes that an adjustment in Contract Times or Contract Price is necessary, then Contractor shall submit any Change Proposal seeking such an adjustment no later than 30 days after the completion of the Work set out in the Work Change Directive.

2. Owner believes that an adjustment in Contract Times or Contract Price is necessary, then Owner shall submit any Claim seeking such an adjustment no later than 60 days after issuance of the Work Change Directive.

11.04 Field Orders

A. Engineer may authorize minor changes in the Work if the changes do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly.

B. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

11.05 Owner-Authorized Changes in the Work

A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work. Changes involving the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters will be supported by Engineer’s recommendation.

B. Such changes in the Work may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work must be performed under the applicable conditions of the Contract Documents.

C. Nothing in this Paragraph 11.05 obligates Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor’s safety obligations under the Contract Documents or Laws and Regulations.

11.06 Unauthorized Changes in the Work

A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents, as amended, modified, or supplemented, except in the case of an emergency as provided in Paragraph 7.15 or in the case of uncovering Work as provided in Paragraph 14.05.C.2.

11.07 Change of Contract Price

A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment of Contract Price must comply with the provisions of Article 12.

B. An adjustment in the Contract Price will be determined as follows:
1. Where the Work involved is covered by unit prices contained in the Contract Documents, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03);

2. Where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.07.C.2); or

3. Where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor’s fee for overhead and profit (determined as provided in Paragraph 11.07.C).

C. Contractor’s Fee: When applicable, the Contractor’s fee for overhead and profit will be determined as follows:

1. A mutually acceptable fixed fee; or

2. If a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
   a. For costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2, the Contractor’s fee will be 15 percent;
   b. For costs incurred under Paragraph 13.01.B.3, the Contractor’s fee will be 5 percent;
   c. Where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 11.07.C.2.a and 11.07.C.2.b is that the Contractor’s fee will be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of 5 percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted Work the maximum total fee to be paid by Owner will be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the Work;
   d. No fee will be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;
   e. The amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in Cost of the Work will be the amount of the actual net decrease in Cost of the Work and a deduction of an additional amount equal to 5 percent of such actual net decrease in Cost of the Work; and
   f. When both additions and credits are involved in any one change or Change Proposal, the adjustment in Contractor’s fee will be computed by determining the sum of the costs in each of the cost categories in Paragraph 13.01.B (specifically, payroll costs, Paragraph 13.01.B.1; incorporated materials and equipment costs, Paragraph 13.01.B.2; Subcontract costs, Paragraph 13.01.B.3; special consultants costs, Paragraph 13.01.B.4; and other costs, Paragraph 13.01.B.5) and applying to each such cost category sum the appropriate fee from Paragraphs 11.07.C.2.a through 11.07.C.2.e, inclusive.
11.08 Change of Contract Times

A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment in the Contract Times must comply with the provisions of Article 12.

B. Delay, disruption, and interference in the Work, and any related changes in Contract Times, are addressed in and governed by Paragraph 4.05.

11.09 Change Proposals

A. **Purpose and Content:** Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; contest an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; challenge a set-off against payment due; or seek other relief under the Contract. The Change Proposal will specify any proposed change in Contract Times or Contract Price, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents. Each Change Proposal will address only one issue, or a set of closely related issues.

B. **Change Proposal Procedures**

1. **Submittal:** Contractor shall submit each Change Proposal to Engineer within 30 days after the start of the event giving rise thereto, or after such initial decision.

2. **Supporting Data:** The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal.
   
   a. Change Proposals based on or related to delay, interruption, or interference must comply with the provisions of Paragraphs 4.05.D and 4.05.E.
   
   b. Change proposals related to a change of Contract Price must include full and detailed accounts of materials incorporated into the Work and labor and equipment used for the subject Work.

   The supporting data must be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event.

3. **Engineer’s Initial Review:** Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal. If in its discretion Engineer concludes that additional supporting data is needed before conducting a full review and making a decision regarding the Change Proposal, then Engineer may request that Contractor submit such additional supporting data by a date specified by Engineer, prior to Engineer beginning its full review of the Change Proposal.

4. **Engineer’s Full Review and Action on the Change Proposal:** Upon receipt of Contractor’s supporting data (including any additional data requested by Engineer), Engineer will conduct a full review of each Change Proposal and, within 30 days after such receipt of the Contractor’s supporting data, either approve the Change Proposal in whole, deny it in whole, or approve it in part and deny it in part. Such actions must be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change
Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer’s inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.

5. **Binding Decision**: Engineer’s decision is final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.

C. **Resolution of Certain Change Proposals**: If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties in writing that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice will be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.

D. **Post-Completion**: Contractor shall not submit any Change Proposals after Engineer issues a written recommendation of final payment pursuant to Paragraph 15.06.B.

11.10 **Notification to Surety**

A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor’s responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

**ARTICLE 12—CLAIMS**

12.01 **Claims**

A. **Claims Process**: The following disputes between Owner and Contractor are subject to the Claims process set forth in this article:

1. Appeals by Owner or Contractor of Engineer’s decisions regarding Change Proposals;

2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents;

3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters; and

4. Subject to the waiver provisions of Paragraph 15.07, any dispute arising after Engineer has issued a written recommendation of final payment pursuant to Paragraph 15.06.B.

B. **Submittal of Claim**: The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim rests with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor’s knowledge
and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.

C. **Review and Resolution**: The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim will be stated in writing and submitted to the other party, with a copy to Engineer.

D. **Mediation**

1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate will stay the Claim submittal and response process.

2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process will resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim submittal and decision process will resume as of the date of the conclusion of the mediation, as determined by the mediator.

3. Owner and Contractor shall each pay one-half of the mediator’s fees and costs.

E. **Partial Approval**: If the party receiving a Claim approves the Claim in part and denies it in part, such action will be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.

F. **Denial of Claim**: If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim will be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.

G. **Final and Binding Results**: If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim will be incorporated in a Change Order or other written document to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

**ARTICLE 13—COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK**

13.01 **Cost of the Work**

A. **Purpose for Determination of Cost of the Work**: The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:

1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or
2. When needed to determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.

B. Costs Included: Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work will be in amounts no higher than those commonly incurred in the locality of the Project, will not include any of the costs itemized in Paragraph 13.01.C, and will include only the following items:

1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor in advance of the subject Work. Such employees include, without limitation, superintendents, foremen, safety managers, safety representatives, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work will be prorated on the basis of their time spent on the Work. Payroll costs include, but are not limited to, salaries and wages plus the cost of fringe benefits, which include social security contributions, unemployment, excise, and payroll taxes, workers’ compensation, health and retirement benefits, sick leave, and vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, will be included in the above to the extent authorized by Owner.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers’ field services required in connection therewith. All cash discounts accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts will accrue to Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment will accrue to Owner, and Contractor shall make provisions so that they may be obtained.

3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, which will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor’s Cost of the Work and fee will be determined in the same manner as Contractor’s Cost of the Work and fee as provided in this Paragraph 13.01.

4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed or retained for services specifically related to the Work.

5. Other costs consisting of the following:
   a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor’s employees incurred in discharge of duties connected with the Work.
   b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, which are
consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.

1) In establishing included costs for materials such as scaffolding, plating, or sheeting, consideration will be given to the actual or the estimated life of the material for use on other projects; or rental rates may be established on the basis of purchase or salvage value of such items, whichever is less. Contractor will not be eligible for compensation for such items in an amount that exceeds the purchase cost of such item.

c. Construction Equipment Rental

1) Rentals of all construction equipment and machinery, and the parts thereof, in accordance with rental agreements approved by Owner as to price (including any surcharge or special rates applicable to overtime use of the construction equipment or machinery), and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs will be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts must cease when the use thereof is no longer necessary for the Work.

2) Costs for equipment and machinery owned by Contractor or a Contractor-related entity will be paid at a rate shown for such equipment in the equipment rental rate book specified in the Supplementary Conditions. An hourly rate will be computed by dividing the monthly rates by 176. These computed rates will include all operating costs.

3) With respect to Work that is the result of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price (“changed Work”), included costs will be based on the time the equipment or machinery is in use on the changed Work and the costs of transportation, loading, unloading, assembly, dismantling, and removal when directly attributable to the changed Work. The cost of any such equipment or machinery, or parts thereof, must cease to accrue when the use thereof is no longer necessary for the changed Work.

d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.

e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of builder’s risk or other property insurance established in accordance with Paragraph 6.04), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses will be included in the Cost of the Work for the purpose of determining Contractor’s fee.
g. The cost of utilities, fuel, and sanitary facilities at the Site.

h. Minor expenses such as communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.

i. The costs of premiums for all bonds and insurance that Contractor is required by the Contract Documents to purchase and maintain.

C. Costs Excluded: The term Cost of the Work does not include any of the following items:

1. Payroll costs and other compensation of Contractor’s officers, executives, principals, general managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expediters, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor’s principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor’s fee.

2. The cost of purchasing, renting, or furnishing small tools and hand tools.

3. Expenses of Contractor’s principal and branch offices other than Contractor’s office at the Site.

4. Any part of Contractor’s capital expenses, including interest on Contractor’s capital employed for the Work and charges against Contractor for delinquent payments.

5. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.

6. Expenses incurred in preparing and advancing Claims.

7. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.

D. Contractor’s Fee

1. When the Work as a whole is performed on the basis of cost-plus-a-fee, then:

   a. Contractor’s fee for the Work set forth in the Contract Documents as of the Effective Date of the Contract will be determined as set forth in the Agreement.

   b. for any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price on the basis of Cost of the Work, Contractor’s fee will be determined as follows:

      1) When the fee for the Work as a whole is a percentage of the Cost of the Work, the fee will automatically adjust as the Cost of the Work changes.

      2) When the fee for the Work as a whole is a fixed fee, the fee for any additions or deletions will be determined in accordance with Paragraph 11.07.C.2.

2. When the Work as a whole is performed on the basis of a stipulated sum, or any other basis other than cost-plus-a-fee, then Contractor’s fee for any Work covered by a Change
Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price on the basis of Cost of the Work will be determined in accordance with Paragraph 11.07.C.2.

E. **Documentation and Audit:** Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor and pertinent Subcontractors will establish and maintain records of the costs in accordance with generally accepted accounting practices. Subject to prior written notice, Owner will be afforded reasonable access, during normal business hours, to all Contractor’s accounts, records, books, correspondence, instructions, drawings, receipts, vouchers, memoranda, and similar data relating to the Cost of the Work and Contractor’s fee. Contractor shall preserve all such documents for a period of three years after the final payment by Owner. Pertinent Subcontractors will afford such access to Owner, and preserve such documents, to the same extent required of Contractor.

13.02 **Allowances**

A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.

B. **Cash Allowances:** Contractor agrees that:

1. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and

2. Contractor’s costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment for any of the foregoing will be valid.

C. **Owner’s Contingency Allowance:** Contractor agrees that an Owner’s contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.

D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor for Work covered by allowances, and the Contract Price will be correspondingly adjusted.

13.03 **Unit Price Work**

A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.

B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Payments to Contractor for Unit Price Work will be based on actual quantities.

C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor’s overhead and profit for each separately identified item.

D. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer’s preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer’s written decision
thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, and the final adjustment of Contract Price will be set forth in a Change Order, subject to the provisions of the following paragraph.

E. Adjustments in Unit Price

1. Contractor or Owner shall be entitled to an adjustment in the unit price with respect to an item of Unit Price Work if:
   a. the quantity of the item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and
   b. Contractor’s unit costs to perform the item of Unit Price Work have changed materially and significantly as a result of the quantity change.

2. The adjustment in unit price will account for and be coordinated with any related changes in quantities of other items of Work, and in Contractor’s costs to perform such other Work, such that the resulting overall change in Contract Price is equitable to Owner and Contractor.

3. Adjusted unit prices will apply to all units of that item.

ARTICLE 14—TESTS AND INSPECTIONS; CORRECTION, REMOVAL, OR ACCEPTANCE OF DEFECTIVE WORK

14.01 Access to Work

A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and authorities having jurisdiction have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor’s safety procedures and programs so that they may comply with such procedures and programs as applicable.

14.02 Tests, Inspections, and Approvals

A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.

B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work will be governed by the provisions of Paragraph 14.05.

C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.
D. Contractor shall be responsible for arranging, obtaining, and paying for all inspections and tests required:

1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;

2. to attain Owner’s and Engineer’s acceptance of materials or equipment to be incorporated in the Work;

3. by manufacturers of equipment furnished under the Contract Documents;

4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and

5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor’s purchase thereof for incorporation in the Work.

Such inspections and tests will be performed by independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to Owner and Engineer.

E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.

F. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering will be at Contractor’s expense unless Contractor had given Engineer timely notice of Contractor’s intention to cover the same and Engineer had not acted with reasonable promptness in response to such notice.

14.03 Defective Work

A. Contractor’s Obligation: It is Contractor’s obligation to assure that the Work is not defective.

B. Engineer’s Authority: Engineer has the authority to determine whether Work is defective, and to reject defective Work.

C. Notice of Defects: Prompt written notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.

D. Correction, or Removal and Replacement: Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.

E. Preservation of Warranties: When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner’s special warranty and guarantee, if any, on said Work.

F. Costs and Damages: In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs,
losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

14.04 **Acceptance of Defective Work**

A. If, instead of requiring correction or removal and replacement of defective Work, Owner prefers to accept it, Owner may do so (subject, if such acceptance occurs prior to final payment, to Engineer’s confirmation that such acceptance is in general accord with the design intent and applicable engineering principles, and will not endanger public safety). Contractor shall pay all claims, costs, losses, and damages attributable to Owner’s evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness), and for the diminished value of the Work to the extent not otherwise paid by Contractor. If any such acceptance occurs prior to final payment, the necessary revisions in the Contract Documents with respect to the Work will be incorporated in a Change Order. If the parties are unable to agree as to the decrease in the Contract Price, reflecting the diminished value of Work so accepted, then Owner may impose a reasonable set-off against payments due under Article 15. If the acceptance of defective Work occurs after final payment, Contractor shall pay an appropriate amount to Owner.

14.05 **Uncovering Work**

A. Engineer has the authority to require additional inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.

B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer’s observation, and then replace the covering, all at Contractor’s expense.

C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then Contractor, at Engineer’s request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, and provide all necessary labor, material, and equipment.

1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and pending Contractor’s full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.

2. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

14.06 **Owner May Stop the Work**

A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, then Owner may order Contractor to stop the Work,
or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work will not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

14.07 Owner May Correct Defective Work

A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace defective Work as required by Engineer, then Owner may, after 7 days’ written notice to Contractor, correct or remedy any such deficiency.

B. In exercising the rights and remedies under this Paragraph 14.07, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor’s services related thereto, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner’s representatives, agents and employees, Owner’s other contractors, and Engineer and Engineer’s consultants access to the Site to enable Owner to exercise the rights and remedies under this paragraph.

C. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor’s defective Work.

D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner’s rights and remedies under this Paragraph 14.07.

ARTICLE 15—PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD

15.01 Progress Payments

A. Basis for Progress Payments: The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments for Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.

B. Applications for Payments

1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents.

2. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment must also be accompanied by: (a) a bill of sale, invoice, copies of subcontract or purchase order payments, or other documentation
establishing full payment by Contractor for the materials and equipment; (b) at Owner’s request, documentation warranting that Owner has received the materials and equipment free and clear of all Liens; and (c) evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner’s interest therein, all of which must be satisfactory to Owner.

3. Beginning with the second Application for Payment, each Application must include an affidavit of Contractor stating that all previous progress payments received by Contractor have been applied to discharge Contractor’s legitimate obligations associated with prior Applications for Payment.

4. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

C. Review of Applications

1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing Engineer’s reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.

2. Engineer’s recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer’s observations of the executed Work as an experienced and qualified design professional, and on Engineer’s review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer’s knowledge, information and belief:

   a. the Work has progressed to the point indicated;

   b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and any other qualifications stated in the recommendation); and

   c. the conditions precedent to Contractor’s being entitled to such payment appear to have been fulfilled in so far as it is Engineer’s responsibility to observe the Work.

3. By recommending any such payment Engineer will not thereby be deemed to have represented that:

   a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract; or

   b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.
4. Neither Engineer’s review of Contractor’s Work for the purposes of recommending payments nor Engineer’s recommendation of any payment, including final payment, will impose responsibility on Engineer:
   a. to supervise, direct, or control the Work;
   b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto;
   c. for Contractor’s failure to comply with Laws and Regulations applicable to Contractor’s performance of the Work;
   d. to make any examination to ascertain how or for what purposes Contractor has used the money paid by Owner; or
   e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.

5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer’s opinion, it would be incorrect to make the representations to Owner stated in Paragraph 15.01.C.2.

6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer’s opinion to protect Owner from loss because:
   a. the Work is defective, requiring correction or replacement;
   b. the Contract Price has been reduced by Change Orders;
   c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
   d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or
   e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.

D. Payment Becomes Due

1. Ten days after presentation of the Application for Payment to Owner with Engineer’s recommendation, the amount recommended (subject to any Owner set-offs) will become due, and when due will be paid by Owner to Contractor.

E. Reductions in Payment by Owner

1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:
   a. Claims have been made against Owner based on Contractor’s conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages resulting from Contractor’s conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;
b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;

c. Contractor has failed to provide and maintain required bonds or insurance;

d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;

e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;

f. The Work is defective, requiring correction or replacement;

g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;

h. The Contract Price has been reduced by Change Orders;

i. An event has occurred that would constitute a default by Contractor and therefore justify a termination for cause;

j. Liquidated or other damages have accrued as a result of Contractor’s failure to achieve Milestones, Substantial Completion, or final completion of the Work;

k. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens; or

l. Other items entitle Owner to a set-off against the amount recommended.

2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, if Contractor remedies the reasons for such action. The reduction imposed will be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.

3. Upon a subsequent determination that Owner’s refusal of payment was not justified, the amount wrongfully withheld will be treated as an amount due as determined by Paragraph 15.01.D.1 and subject to interest as provided in the Agreement.

15.02 Contractor’s Warranty of Title

A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all Liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than 7 days after the time of payment by Owner.

15.03 Substantial Completion

A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time
submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.

B. Promptly after Contractor’s notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.

C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which will fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have 7 days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner’s objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.

D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner’s use or occupancy of the Work following Substantial Completion, review the builder’s risk insurance policy with respect to the end of the builder’s risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner’s use or occupancy of the Work.

E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.

F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

15.04 Partial Use or Occupancy

A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without
significant interference with Contractor’s performance of the remainder of the Work, subject to the following conditions:

1. At any time, Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through 15.03.E for that part of the Work.

2. At any time, Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 15.03 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 6.04 regarding builder’s risk or other property insurance.

15.05 Final Inspection

A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work, or agreed portion thereof, is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

15.06 Final Payment

A. Application for Payment

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, annotated record documents (as provided in Paragraph 7.12), and other documents, Contractor may make application for final payment.

2. The final Application for Payment must be accompanied (except as previously delivered) by:
   a. all documentation called for in the Contract Documents;
   b. consent of the surety, if any, to final payment;
   c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment.
d. a list of all duly pending Change Proposals and Claims; and  
e. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien  
rights arising out of the Work, and of Liens filed in connection with the Work.  

3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved  
by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor  
that: (a) the releases and receipts include all labor, services, material, and equipment for  
which a Lien could be filed; and (b) all payrolls, material and equipment bills, and other  
indebtedness connected with the Work for which Owner might in any way be responsible,  
or which might in any way result in liens or other burdens on Owner's property, have been  
paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release  
or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner  
to indemnify Owner against any Lien, or Owner at its option may issue joint checks  
payable to Contractor and specified Subcontractors and Suppliers.  

B. **Engineer's Review of Final Application and Recommendation of Payment:** If, on the basis of  
Engineer’s observation of the Work during construction and final inspection, and Engineer’s  
review of the final Application for Payment and accompanying documentation as required by  
the Contract Documents, Engineer is satisfied that the Work has been completed and  
Contractor’s other obligations under the Contract have been fulfilled, Engineer will, within 10  
days after receipt of the final Application for Payment, indicate in writing Engineer’s  
recommendation of final payment and present the final Application for Payment to Owner  
for payment. Such recommendation will account for any set-offs against payment that are  
necessary in Engineer’s opinion to protect Owner from loss for the reasons stated above with  
respect to progress payments. Otherwise, Engineer will return the Application for Payment to  
Contractor, indicating in writing the reasons for refusing to recommend final payment, in  
which case Contractor shall make the necessary corrections and resubmit the Application for  
Payment.  

C. **Notice of Acceptability:** In support of its recommendation of payment of the final Application  
for Payment, Engineer will also give written notice to Owner and Contractor that the Work is  
acceptable, subject to stated limitations in the notice and to the provisions of  
Paragraph 15.07.  

D. **Completion of Work:** The Work is complete (subject to surviving obligations) when it is ready  
for final payment as established by the Engineer’s written recommendation of final payment  
and issuance of notice of the acceptability of the Work.  

E. **Final Payment Becomes Due:** Upon receipt from Engineer of the final Application for Payment  
and accompanying documentation, Owner shall set off against the amount recommended by  
Engineer for final payment any further sum to which Owner is entitled, including but not  
limited to set-offs for liquidated damages and set-offs allowed under the provisions of this  
Contract with respect to progress payments. Owner shall pay the resulting balance due to  
Contractor within 30 days of Owner’s receipt of the final Application for Payment from  
Engineer.  

15.07 **Waiver of Claims**  

A. By making final payment, Owner waives its claim or right to liquidated damages or other  
damages for late completion by Contractor, except as set forth in an outstanding Claim,
appeal under the provisions of Article 17, set-off, or express reservation of rights by Owner. Owner reserves all other claims or rights after final payment.

B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted as a Claim, or appealed under the provisions of Article 17.

15.08 Correction Period

A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the Supplementary Conditions or the terms of any applicable special guarantee required by the Contract Documents), Owner gives Contractor written notice that any Work has been found to be defective, or that Contractor's repair of any damages to the Site or adjacent areas has been found to be defective, then after receipt of such notice of defect Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:

1. correct the defective repairs to the Site or such adjacent areas;
2. correct such defective Work;
3. remove the defective Work from the Project and replace it with Work that is not defective, if the defective Work has been rejected by Owner, and
4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting from the corrective measures.

B. Owner shall give any such notice of defect within 60 days of the discovery that such Work or repairs is defective. If such notice is given within such 60 days but after the end of the correction period, the notice will be deemed a notice of defective Work under Paragraph 7.17.B.

C. If, after receipt of a notice of defect within 60 days and within the correction period, Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. Contractor shall pay all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others). Contractor's failure to pay such costs, losses, and damages within 10 days of invoice from Owner will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the failure to pay.

D. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.

E. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.
F. Contractor’s obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph are not to be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

ARTICLE 16—SUSPENSION OF WORK AND TERMINATION

16.01 Owner May Suspend Work

A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times directly attributable to any such suspension. Any Change Proposal seeking such adjustments must be submitted no later than 30 days after the date fixed for resumption of Work.

16.02 Owner May Terminate for Cause

A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:

1. Contractor’s persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment, or failure to adhere to the Progress Schedule);

2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;

3. Contractor’s disregard of Laws or Regulations of any public body having jurisdiction; or

4. Contractor’s repeated disregard of the authority of Owner or Engineer.

B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) 10 days’ written notice that Owner is considering a declaration that Contractor is in default and termination of the Contract, Owner may proceed to:

1. declare Contractor to be in default, and give Contractor (and any surety) written notice that the Contract is terminated; and

2. enforce the rights available to Owner under any applicable performance bond.

C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.

D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within 7 days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.

E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects,
attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses, and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

F. Where Contractor’s services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.

G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond will govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

16.03 Owner May Terminate for Convenience

A. Upon 7 days’ written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):

1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;

2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses; and

3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.

B. Contractor shall not be paid for any loss of anticipated profits or revenue, post-termination overhead costs, or other economic loss arising out of or resulting from such termination.

16.04 Contractor May Stop Work or Terminate

A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon 7 days’ written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms as provided in Paragraph 16.03.

B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, 7 days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The
provisions of this paragraph are not intended to preclude Contractor from submitting a Change Proposal for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor’s stopping the Work as permitted by this paragraph.

ARTICLE 17—FINAL RESOLUTION OF DISPUTES

17.01 Methods and Procedures

A. Disputes Subject to Final Resolution: The following disputed matters are subject to final resolution under the provisions of this article:

1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full, pursuant to Article 12; and

2. Disputes between Owner and Contractor concerning the Work, or obligations under the Contract Documents, that arise after final payment has been made.

B. Final Resolution of Disputes: For any dispute subject to resolution under this article, Owner or Contractor may:

1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions;

2. agree with the other party to submit the dispute to another dispute resolution process; or

3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

ARTICLE 18—MISCELLANEOUS

18.01 Giving Notice

A. Whenever any provision of the Contract requires the giving of written notice to Owner, Engineer, or Contractor, it will be deemed to have been validly given only if delivered:

1. in person, by a commercial courier service or otherwise, to the recipient’s place of business;

2. by registered or certified mail, postage prepaid, to the recipient’s place of business; or

3. by e-mail to the recipient, with the words “Formal Notice” or similar in the e-mail’s subject line.

18.02 Computation of Times

A. When any period of time is referred to in the Contract by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.
18.03 **Cumulative Remedies**

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract. The provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

18.04 **Limitation of Damages**

A. With respect to any and all Change Proposals, Claims, disputes subject to final resolution, and other matters at issue, neither Owner nor Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall be liable to Contractor for any claims, costs, losses, or damages sustained by Contractor on or in connection with any other project or anticipated project.

18.05 **No Waiver**

A. A party's non-enforcement of any provision will not constitute a waiver of that provision, nor will it affect the enforceability of that provision or of the remainder of this Contract.

18.06 **Survival of Obligations**

A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract, as well as all continuing obligations indicated in the Contract, will survive final payment, completion, and acceptance of the Work or termination of the Contract or of the services of Contractor.

18.07 **Controlling Law**

A. This Contract is to be governed by the law of the state in which the Project is located.

18.08 **Assignment of Contract**

A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party to this Contract of any rights under or interests in the Contract will be binding on the other party without the written consent of the party sought to be bound; and, specifically but without limitation, money that may become due and money that is due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract.

18.09 **Successors and Assigns**

A. Owner and Contractor each binds itself, its successors, assigns, and legal representatives to the other party hereto, its successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

18.10 **Headings**

A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.
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# SUPPLEMENTARY CONDITIONS OF THE CONSTRUCTION CONTRACT

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SUPPLEMENTARY CONDITIONS
OF THE CONSTRUCTION CONTRACT

These Supplementary Conditions amend or supplement EJCDC® C-700, Standard General Conditions of the Construction Contract (2018). The General Conditions remain in full force and effect except as amended.

The terms used in these Supplementary Conditions have the meanings stated in the General Conditions. Additional terms, if any, used in these Supplementary Conditions have the meanings stated below, which are applicable to both the singular and plural thereof.

The paragraph address system used in these Supplementary Conditions is the same as the paragraph address system used in the General Conditions, with the prefix "SC" added—for example, “Paragraph SC-4.05.”

ARTICLE 1—DEFINITIONS AND TERMINOLOGY

SC-1.01.A.16 Add the following to Paragraph 1.01.A.16:

When the Project is to be constructed under multiple direct Contracts awarded by the Owner, the term “Contractor” shall mean the appropriate prime contractor. Whenever a specific prime Contractor is referred to, terms such as “General Contractor”, “Electrical Contractor”, “Plumbing Contractor”, “HVAC Contractor”, or other appropriate Contract-indicating term will be used.

SC-1.01.A.40 Add the following to Paragraph 1.01.A.40:

Trucking, shipping, delivery firms, consultants, and entities performing testing or inspection retained by Contractor or any Subcontractor are considered to be Subcontractors.

SC-1.01.A.45 Add the following to Paragraph 1.01.A.45:

Entities that rent construction equipment or machinery, but are not incorporated into the Work, are considered to be Suppliers. If such rental entity furnishes both equipment and one or more personnel to operate and maintain the equipment, such entity is a Subcontractor.

ARTICLE 2—PRELIMINARY MATTERS

2.01 Delivery of Bonds and Evidence of Insurance

SC-2.01 Delete Paragraphs 2.01.B. and C. in their entirety and insert the following in their place:

B. Evidence of Contractor’s Insurance: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner copies of the policies (including all endorsements, and identification of applicable self-insured retentions and deductibles) of insurance required to be provided by Contractor in this Contract. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

2.02 Copies of Documents
SC-2.02 Amend the first sentence of Paragraph 2.02.A to read as follows:

Owner shall furnish to Contractor one paper copy of the Contract Documents (including one fully signed counterpart of the Agreement), and one copy in electronic portable document format (PDF).

ARTICLE 3—CONTRACT DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.01 Intent

SC-3.01 Delete Paragraph 3.01.C in its entirety.

SC-3.01 Add the following new paragraphs immediately after Paragraph 3.01.E:

F. The Specifications and other verbal components of the Contract Documents may vary in form, format, and style. Some Specification sections are written in varying degrees of streamlined or declarative style and some Specifications sections may, in comparison, employ a more-narrative style. Omissions of such words and phrases as "Contractor shall," "in conformity with," "as shown," or "as specified" are intentional in streamlined language in the Contract Documents. Omitted words and phrases are incorporated by inference. Similar types of provisions may appear in various parts of a Specifications section or elsewhere in the Contract Documents. Contractor shall not attempt to take advantage of any variation of form, format or style in Change Proposal(s) and Claim(s).

G. Cross referencing of Specification sections in a Specifications section’s heading "Related Sections include..." and elsewhere within each Specifications section is provided as an aid and convenience to Contractor. Contractor shall not rely on cross referencing indicated and is responsible for coordinating the entire Work and providing a complete Project whether or not cross referencing is provided in each Specifications section or whether or not cross referencing is complete.

ARTICLE 4—COMMENCEMENT AND PROGRESS OF THE WORK

No Supplementary Conditions in this Article.

ARTICLE 5—SITE, SUBSURFACE AND PHYSICAL CONDITIONS, HAZARDOUS ENVIRONMENTAL CONDITIONS

5.03 Subsurface and Physical Conditions

SC-5.03 Add the following new paragraphs immediately after Paragraph 5.03.D:

E. No reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data will be made available for this project. The Work will be conducted within and existing building and no earthwork will be required as part of the Work.

F. The following table lists the drawings of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to
the Site (except Underground Facilities), that contain Technical Data, and specifically identifies the Technical Data upon which Contractor may rely:

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<td>Record Drawings</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

F. Contractor may examine copies of reports and drawings identified in SC-5.03.E and SC-5.03.F that were not included with the Bidding Documents at Hailey City Hall during regular business hours, or may request copies from Engineer.

5.06 Hazardous Environmental Conditions

SC-5.06 Delete Paragraphs 5.06.A and 5.06.B in their entirety and insert the following:

A. No reports or drawings related to Hazardous Environmental Conditions at the Site are known to Owner.

B. Not used.

ARTICLE 6—BONDS AND INSURANCE

6.01 Performance, Payment, and Other Bonds

SC-6.01 Add the following paragraphs immediately after Paragraph 6.01.A:

1. Required Performance Bond Form: The performance bond that Contractor furnishes will be in the form of EJCDC® C-610, Performance Bond (2018 edition).

2. Required Payment Bond Form: The payment bond that Contractor furnishes will be in the form of EJCDC® C-615, Payment Bond (2018 edition).

SC-6.01 Add the following paragraphs immediately after Paragraph 6.01.B:

1. The correction period specified as one year after the date of Substantial Completion in Paragraph 15.08.A of the General Conditions is hereby revised to be [number—either “two”, “three”, or other] years after Substantial Completion.

2. After Substantial Completion, Contractor shall furnish a warranty bond issued in the form of EJCDC® C-612, Warranty Bond (2018). The warranty bond must be in a bond amount of [amount—either 10, 15, or other] percent of the final Contract Price. The warranty bond period will extend to a date [number—either “two”, “three” or other] years after Substantial Completion of the Work. Contractor shall deliver the fully executed warranty bond to Owner prior to or with the final Application for Payment, and in any event not later than 11 months after Substantial Completion.

3. The warranty bond must be issued by the same surety that issues the performance bond required under Paragraph 6.01.A of the General Conditions.

6.02 Insurance—General Provisions
Add the following paragraph immediately after Paragraph 6.02.B:

1. Contractor may obtain worker’s compensation insurance from an insurance company that has not been rated by A.M. Best, provided that such company (a) is domiciled in the state in which the Project is located, (b) is certified or authorized as a worker’s compensation insurance provider by the appropriate state agency, and (c) has been accepted to provide worker’s compensation insurance for similar projects by the state within the last 12 months.

6.03 Contractor’s Insurance

Supplement Paragraph 6.03 with the following provisions after Paragraph 6.03.C:

D. Other Additional Insureds: As a supplement to the provisions of Paragraph 6.03.C of the General Conditions, the commercial general liability, automobile liability, umbrella or excess, pollution liability, and unmanned aerial vehicle liability policies must include as additional insureds (in addition to Owner and Engineer) the following: [Here list by legal name (not Project role or classification) other persons or entities to be included as additional insureds. See GC-6.03.C.]

E. Workers’ Compensation and Employer’s Liability: Contractor shall purchase and maintain workers’ compensation and employer’s liability insurance, including, as applicable, United States Longshoreman and Harbor Workers’ Compensation Act, Jones Act, stop-gap employer’s liability coverage for monopolistic states, and foreign voluntary workers’ compensation (from available sources, notwithstanding the jurisdictional requirement of Paragraph 6.02.B of the General Conditions).

<table>
<thead>
<tr>
<th>Workers’ Compensation and Related Policies</th>
<th>Policy limits of not less than:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Workers’ Compensation</strong></td>
<td></td>
</tr>
<tr>
<td>State</td>
<td>Statutory</td>
</tr>
<tr>
<td>Applicable Federal (e.g., Longshoreman’s)</td>
<td>Statutory</td>
</tr>
<tr>
<td>Foreign voluntary workers’ compensation</td>
<td>Statutory</td>
</tr>
<tr>
<td>Employer’s Liability</td>
<td></td>
</tr>
<tr>
<td>Bodily injury by accident—each accident</td>
<td>$500,000</td>
</tr>
<tr>
<td>Bodily injury by disease—each employee</td>
<td>$500,000</td>
</tr>
<tr>
<td>Bodily injury by disease—aggregate</td>
<td>$500,000</td>
</tr>
</tbody>
</table>

F. Commercial General Liability—Claims Covered: Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against claims for:

1. damages because of bodily injury, sickness or disease, or death of any person other than Contractor’s employees,
2. damages insured by reasonably available personal injury liability coverage, and
3. damages because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.

G. **Commercial General Liability—Form and Content:** Contractor’s commercial liability policy must be written on a 1996 (or later) Insurance Services Organization, Inc. (ISO) commercial general liability form (occurrence form) and include the following coverages and endorsements:

1. Products and completed operations coverage.
   a. Such insurance must be maintained for three years after final payment.
   b. Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.

2. Blanket contractual liability coverage, including but not limited to coverage of Contractor’s contractual indemnity obligations in Paragraph 7.18.

3. Severability of interests and no insured-versus-insured or cross-liability exclusions.

4. Underground, explosion, and collapse coverage.

5. Personal injury coverage.

6. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together). If Contractor demonstrates to Owner that the specified ISO endorsements are not commercially available, then Contractor may satisfy this requirement by providing equivalent endorsements.

7. For design professional additional insureds, ISO Endorsement CG 20 32 07 04 “Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured” or its equivalent.

H. **Commercial General Liability—Excluded Content:** The commercial general liability insurance policy, including its coverages, endorsements, and incorporated provisions, must not include any of the following:

1. Any modification of the standard definition of “insured contract” (except to delete the railroad protective liability exclusion if Contractor is required to indemnify a railroad or others with respect to Work within 50 feet of railroad property).

2. Any exclusion for water intrusion or water damage.

3. Any provisions resulting in the erosion of insurance limits by defense costs other than those already incorporated in ISO form CG 00 01.

4. Any exclusion of coverage relating to earth subsidence or movement.

5. Any exclusion for the insured’s vicarious liability, strict liability, or statutory liability (other than worker’s compensation).

6. Any limitation or exclusion based on the nature of Contractor’s work.

7. Any professional liability exclusion broader in effect than the most recent edition of ISO form CG 22 79.
I. **Commercial General Liability—Minimum Policy Limits**

<table>
<thead>
<tr>
<th>Commercial General Liability</th>
<th>Policy limits of not less than:</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Aggregate</td>
<td>$1,000,000</td>
</tr>
<tr>
<td>Products—Completed Operations Aggregate</td>
<td>$1,000,000</td>
</tr>
<tr>
<td>Personal and Advertising Injury</td>
<td>$1,000,000</td>
</tr>
<tr>
<td>Bodily Injury and Property Damage—Each Occurrence</td>
<td>$1,000,000</td>
</tr>
</tbody>
</table>

J. **Automobile Liability:** Contractor shall purchase and maintain automobile liability insurance for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle. The automobile liability policy must be written on an occurrence basis.

<table>
<thead>
<tr>
<th>Automobile Liability</th>
<th>Policy limits of not less than:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bodily Injury</td>
<td></td>
</tr>
<tr>
<td>Each Person</td>
<td>$1,500,000</td>
</tr>
<tr>
<td>Each Accident</td>
<td>$1,500,000</td>
</tr>
<tr>
<td>Property Damage</td>
<td></td>
</tr>
<tr>
<td>Each Accident</td>
<td>$1,500,000</td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td><strong>Combined Single Limit</strong></td>
<td></td>
</tr>
<tr>
<td>Combined Single Limit (Bodily Injury and Property Damage)</td>
<td>$1,500,000</td>
</tr>
</tbody>
</table>

K. **Umbrella or Excess Liability:** Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer’s liability, commercial general liability, and automobile liability insurance described in the Paragraphs above. The coverage afforded must be at least as broad as that of each and every one of the underlying policies.

<table>
<thead>
<tr>
<th>Excess or Umbrella Liability</th>
<th>Policy limits of not less than:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Each Occurrence</td>
<td>$1,000,000</td>
</tr>
<tr>
<td>General Aggregate</td>
<td>$1,000,000</td>
</tr>
</tbody>
</table>

L. **Using Umbrella or Excess Liability Insurance to Meet CGL and Other Policy Limit Requirements:** Contractor may meet the policy limits specified for employer’s liability, commercial general liability, and automobile liability through the primary policies alone, or through combinations of the primary insurance policy’s policy limits and partial attribution of the policy limits of an umbrella or excess liability policy that is at least as broad in coverage as that of the underlying policy, as specified herein. If such umbrella or excess liability policy
was required under this Contract, at a specified minimum policy limit, such umbrella or excess policy must retain a minimum limit of $ after accounting for partial attribution of its limits to underlying policies, as allowed above.

M. **Contractor’s Pollution Liability Insurance:** Contractor shall purchase and maintain a policy covering third-party injury and property damage, including cleanup costs, as a result of pollution conditions arising from Contractor’s operations and completed operations. This insurance must be maintained for no less than three years after final completion.

<table>
<thead>
<tr>
<th>Contractor’s Pollution Liability</th>
<th>Policy limits of not less than:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Each Occurrence/Claim</td>
<td>N/A</td>
</tr>
<tr>
<td>General Aggregate</td>
<td>N/A</td>
</tr>
</tbody>
</table>

N. **Contractor’s Professional Liability Insurance:** If Contractor will provide or furnish professional services under this Contract, through a delegation of professional design services or otherwise, then Contractor shall be responsible for purchasing and maintaining applicable professional liability insurance. This insurance must cover negligent acts, errors, or omissions in the performance of professional design or related services by the insured or others for whom the insured is legally liable. The insurance must be maintained throughout the duration of the Contract and for a minimum of two years after Substantial Completion. The retroactive date on the policy must pre-date the commencement of furnishing services on the Project.

<table>
<thead>
<tr>
<th>Contractor’s Professional Liability</th>
<th>Policy limits of not less than:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Each Claim</td>
<td>$1,000,000</td>
</tr>
<tr>
<td>Annual Aggregate</td>
<td>$1,000,000</td>
</tr>
</tbody>
</table>

O. 6.04 **Builder’s Risk and Other Property Insurance**

SC-6.04 Delete Paragraph 6.04.A and insert the following in its place:

A. Owner shall purchase and maintain builder’s risk insurance upon the Work on a completed value basis, in the amount of the Work’s full insurable replacement cost (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). The specific requirements applicable to the builder’s risk insurance are set forth in the Supplementary Conditions.

SC-6.04 Supplement Paragraph 6.04 with the following provisions:

F. **Builder’s Risk Requirements:** The builder’s risk insurance must:

1. be written on a builder’s risk “all risk” policy form that at a minimum includes insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment stored and in transit, and must not exclude the coverage of the following risks: fire; windstorm; hail; flood; earthquake, volcanic activity, and other earth
movement; lightning; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; and water damage (other than that caused by flood).

a. Such policy will include an exception that results in coverage for ensuing losses from physical damage or loss with respect to any defective workmanship, methods, design, or materials exclusions.

b. If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake, volcanic activity, and other earth movement; or flood, are not commercially available under builder’s risk policies, by endorsement or otherwise, such insurance will be provided through other insurance policies acceptable to Owner and Contractor.

2. cover, as insured property, at least the following: (a) the Work and all materials, supplies, machinery, apparatus, equipment, fixtures, and other property of a similar nature that are to be incorporated into or used in the preparation, fabrication, construction, erection, or completion of the Work, including Owner-furnished or assigned property; (b) spare parts inventory required within the scope of the Contract; and (c) temporary works which are not intended to form part of the permanent constructed Work but which are intended to provide working access to the Site, or to the Work under construction, or which are intended to provide temporary support for the Work under construction, including scaffolding, form work, fences, shoring, falsework, and temporary structures.

3. cover expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of contractors, engineers, and architects).

4. extend to cover damage or loss to insured property while in temporary storage at the Site or in a storage location outside the Site (but not including property stored at the premises of a manufacturer or Supplier). If this coverage is subject to a sublimit, such sublimit will be a minimum of $.

5. extend to cover damage or loss to insured property while in transit. If this coverage is subject to a sublimit, such sublimit will be a minimum of $.

6. allow for the waiver of the insurer’s subrogation rights, as set forth in this Contract.

7. allow for partial occupancy or use by Owner by endorsement, and without cancellation or lapse of coverage.

8. include performance/hot testing and start-up, if applicable.

9. be maintained in effect until the Work is complete, as set forth in Paragraph 15.06.D of the General Conditions, or until written confirmation of Owner’s procurement of property insurance following Substantial Completion, whichever occurs first.

10 include as named insureds the Owner, Contractor, Subcontractors (of every tier), and any other individuals or entities required by this Contract to be insured under such builder’s risk policy. For purposes of Paragraphs 6.04, 6.05, and 6.06 of the General Conditions, and this and all other corresponding Supplementary Conditions, the parties
required to be insured will be referred to collectively as “insureds.” In addition to Owner, Contractor, and Subcontractors of every tier, include as insureds the following:

a. [Here list by legal name (not Project role or classification) other persons or entities to be insured on the builder’s risk policy. It is generally recommended to list the insured’s full legal/contractual name, address, contact person, telephone, and e-mail address. Include only persons or entities that have property at the Site that is to be insured by the builder’s risk insurance. If applicable, separately identify any mortgagee or lender required to be named as a loss payee.]

11. include, in addition to the Contract Price amount, the value of the following equipment and materials to be installed by the Contractor but furnished by the Owner or third parties:

   a. Ultraviolet disinfection system: $220,000.00

12. If debris removal in connection with repair or replacement of insured property is subject to a coverage sublimit, such sublimit will be a minimum of $.

G. **Coverage for Completion Delays**: The builder’s risk policy will include, for the benefit of Owner, loss of revenue and soft cost coverage for losses arising from delays in completion that result from covered physical losses or damage. Such coverage will include, without limitation, fixed expenses and debt service for a minimum of 12 months with a maximum deductible of 30 days, compensation for loss of net revenues, rental costs, and attorneys’ fees and engineering or other consultants’ fees, if not otherwise covered.

H. **Builder’s Risk and Other Property Insurance Deductibles**: The purchaser of any required builder’s risk, installation floater, or other property insurance will be responsible for costs not covered because of the application of a policy deductible.

1. The builder’s risk policy (or if applicable the installation floater) will be subject to a deductible amount of not more than $5,000.00 for direct physical loss in any one occurrence.

SC-6.04 Delete Paragraph 6.04.A and substitute the following in its place:

A. **Installation Floater**

1. Contractor shall provide and maintain installation floater insurance on a broad form or “all risk” policy providing coverage for materials, supplies, machinery, fixtures, and equipment that will be incorporated into the Work (“Covered Property”). Coverage under the Contractor’s installation floater will include loss from covered “all risk” causes (perils) to Covered Property:

   a. of the Contractor, and Covered Property of others that is in Contractor’s care, custody, and control;

   b. while in transit to the Site, including while at temporary storage sites;

   c. while at the Site awaiting and during installation, erection, and testing;

   d. continuing at least until the installation or erection of the Covered Property is completed, and the Work into which it is incorporated is accepted by Owner.

2. The installation floater coverage cannot be contingent on an external cause or risk, or limited to property for which the Contractor is legally liable.
3. The installation floater coverage will be in an amount sufficient to protect Contractor’s interest in the Covered Property. The Contractor will be solely responsible for any deductible carried under this coverage.

4. This policy will include a waiver of subrogation applicable to Owner, Contractor, Engineer, all Subcontractors, and the officers, directors, partners, employees, agents and other consultants and subcontractors of any of them.

ARTICLE 7—CONTRACTOR’S RESPONSIBILITIES

7.02 Supervision and Superintendence

SC-7.02 Add the following to Paragraph 7.02, following Paragraph 7.02.B:

C. Unless Owner otherwise agrees in writing, the superintendent will be Contractor’s representative at the Site and shall have authority to act on behalf of Contractor. All communications given to or received from the superintendent shall be binding on Contractor.

7.03 Labor; Working Hours

SC-7.03 Add the following new subparagraphs immediately after Paragraph 7.03.C:

1. Regular working hours will be 7:30 a.m. to 7:00 p.m. local time.
2. Owner’s legal holidays are:
   a. New Years Day (January 1st);
   b. Martin Luther King Jr./Idaho Human Rights Day (3rd Monday in January);
   c. Presidents’ Day (3rd Monday in February);
   d. Memorial Day (Last Monday in May);
   e. Juneteenth National Independence Day (June 19th);
   f. Independence Day (July 4th);
   g. Labor Day (1st Monday in September);
   h. Columbus Day (2nd Monday in October);
   i. Veterans Day (November 11th);
   j. Thanksgiving (4th Thursday in November); and
   k. Christmas (December 25th).

SC-7.03 Amend the first and second sentences of Paragraph 7.03.C to state “…all Work at the Site must be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday as the plant is not staffed on these days and inspectors are generally not available. If Contractor desires Saturday work hours, a contract adjustment will be required to compensate Owner for staffing at overtime rates. No work is allowed on Sundays or holidays unless related to emergency repairs or required by low-flow conditions. If work is required for low-flow conditions, a seven (7) day advance notice is required so
neighbors can be notified of the “off-hours” construction activities.” The balance of Paragraph 7.03.C remains unchanged except for the foregoing.

SC-7.03 Add the following new paragraph immediately after Paragraph 7.03.C:

D. Contractor shall be responsible for the cost of overtime (premium) pay and other expense incurred by Owner for Engineer’s services (including those of the Resident Project Representative, if any), Owner’s representative, and construction observation services, occasioned by the performance of Work on Saturday, Sunday, any legal holiday, or as overtime on any regular work day. If Contractor is responsible but does not pay, or if the parties are unable to agree as to the amount owed, then Owner may impose a reasonable set-off against payments due under Article 15.

SC-7.03 Add the following new subparagraph immediately after Paragraph SC-7.03.D:

1. For purposes of administering the foregoing requirement, additional overtime costs are defined as .

7.10 Taxes

SC-7.10 Add a new paragraph immediately after Paragraph 7.10.A:

A. Owner is exempt from payment of sales and compensating use taxes of the State of Idaho and of cities and counties thereof on all materials to be incorporated into the Work.

1. Owner will furnish the required certificates of tax exemption to Contractor for use in the purchase of materials and equipment to be incorporated into the Work.

2. Owner’s exemption does not apply to construction tools or machinery, construction equipment, or other property purchased by or leased by Contractor, or to supplies or materials not incorporated into the Work.

7.11 Laws and Regulations

SC-7.11 Add the following new paragraph immediately after Paragraph 7.10.C:

D. Refer to Article SC-19, for Laws and Regulations that, by terms of said Laws and Regulations, are to be included in the Contract Documents. The failure to include in Article SC-19 any Law or Regulation applicable to the performance of the Work does not diminish Contractor’s responsibility to comply with all Laws and Regulations applicable to the performance of the Work.

7.13 Safety and Protection

SC-7.13 Insert the following after the second sentence of Paragraph 7.13.G:

The following Owner safety programs are applicable to the Work: Woodside WRF Safety/Training Manual.

7.14 Hazard Communication Programs

SC-7.14 Add the following new paragraph immediately after Paragraph 7.14.A:

B Single Prime Contract: Contractor shall be responsible for coordinating exchange of safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws and Regulations. Contractor shall provide a centralized location for the maintenance of the safety data sheets or other hazard communication information required to be made available by
any employer on the Site. Location of the material safety data sheets or other hazard communication information shall be readily accessible to the employees of employers on the Site.

ARTICLE 8—OTHER WORK AT THE SITE

No Supplementary Conditions in this Article.

ARTICLE 9—OWNER’S RESPONSIBILITIES

9.13 Owner’s Site Representative

Add the following new paragraph immediately after Paragraph 9.12 of the General Conditions:

9.13 Owner’s Site Representative

A. Owner will furnish an “Owner’s Site Representative” (OSR) to represent Owner at the Site and assist Owner in observing the progress and quality of the Work. The Owner’s Site Representative is not Engineer’s consultant, agent, or employee. Owner’s Site Representative will be Brian Yeager. The authority and responsibilities of Owner’s Site Representative follow: City of Hailey Public Works Director.

ARTICLE 10—ENGINEER’S STATUS DURING CONSTRUCTION

10.03 Resident Project Representative

Add the following new paragraphs immediately after Paragraph 10.03.B:

C. The Resident Project Representative (RPR) will be Engineer’s representative at the Site. RPR’s dealings in matters pertaining to the Work in general will be with Engineer and Contractor. RPR’s dealings with Subcontractors will only be through or with the full knowledge or approval of Contractor. The RPR will:

1. *Conferences and Meetings:* Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences, and other Project-related meetings (but not including Contractor’s safety meetings), and as appropriate prepare and circulate copies of minutes thereof.

2. *Safety Compliance:* Comply with Site safety programs, as they apply to RPR, and if required to do so by such safety programs, receive safety training specifically related to RPR’s own personal safety while at the Site.

3. *Liaison*
   a. Serve as Engineer’s liaison with Contractor. Working principally through Contractor’s authorized representative or designee, assist in providing information regarding the provisions and intent of the Contract Documents.
   b. Assist Engineer in serving as Owner’s liaison with Contractor when Contractor’s operations affect Owner’s on-Site operations.
c. Assist in obtaining from Owner additional details or information, when required for Contractor’s proper execution of the Work.

4. **Review of Work; Defective Work**
   a. Conduct on-Site observations of the Work to assist Engineer in determining, to the extent set forth in Paragraph 10.02, if the Work is in general proceeding in accordance with the Contract Documents.
   b. Observe whether any Work in place appears to be defective. This does not impose on either RPR or Engineer any obligation to find all, or any specific element of, defective Work, for which Contractor remains solely responsible.
   b. Observe whether any Work in place should be uncovered for observation, or requires special testing, inspection or approval.

5. **Inspections and Tests**
   a. Observe Contractor-arranged inspections required by Laws and Regulations, including but not limited to (1) code-required tests and special inspections, and (2) those performed by public or other agencies having jurisdiction over the Work.
   b. Observe specific tests, inspections, and other field quality control required by the Contract Documents and performed by Contractor, Subcontractor, Supplier, or by testing or laboratories retained by any of them.
   c. Accompany visiting inspectors representing public or other agencies having jurisdiction over the Work.

6. **Payment Requests:** Review Applications for Payment with Contractor and advise Contractor regarding quantities or extent of the Work eligible for payment.

7. **Completion**
   a. Participate in Engineer’s visits regarding inspection for Substantial Completion.
   b. Assist in the augmenting or amending the punch list of items to be completed or corrected prior to final inspection.
   c. **Final Inspection:** Participate in Engineer’s visit to the Site, in the company of Owner and Contractor, regarding completion of the Work, and prepare a final punch list (if any) of items to be completed or corrected by Contractor.
   d. Observe whether items on the final punch list have been completed or corrected.
   d. **Record Documents:** Periodically during the Work, review with Contractor the status of Contractor’s record documents required by the Contract Documents and advise Contractor on whether such record documents appear to comply with the Contract’s requirements for record documents. Review final record documents submitted by Contractor.

D. **The RPR will not:**
   1. Authorize any deviation from the Contract Documents or substitution of materials, equipment (including “or-equal” items), or procedures or sequences indicated in the Contract Documents.
   2. Exceed limitations of Engineer’s authority as set forth in the Contract Documents.
3. Undertake any of the responsibilities of Contractor, Subcontractors, or Suppliers.

4. Advise on, issue directions relative to, or assume control or responsibility over any aspect of the means, methods, techniques, sequences or procedures of construction.

5. Advise on, issue directions regarding, or assume control over security protection, or safety practices, precautions, and programs in connection with the activities or operations of Owner or Contractor.

6. Participate in specialized field or laboratory tests or inspections conducted off-site by others except as specifically authorized by Engineer.

7. Authorize Owner to occupy the Project in whole or in part.

ARTICLE 11—CHANGES TO THE CONTRACT

11.09 Change Proposals

SC-11.09 Amend Paragraph 11.09.B.1 to add the following sentence immediately after the first sentence:

Failure to submit a Claim within the 30 day period shall constitute a waiver of the relief sought by the party.

ARTICLE 12—CLAIMS

No Supplementary Conditions in this Article.

ARTICLE 13—COST OF WORK; ALLOWANCES, UNIT PRICE WORK

13.01 Cost of the Work

SC-13.01 Supplement Paragraph 13.01.B.5.c.(1) by adding the following subparagraphs:

a) Prior to commencing Work at the Site, submit to Owner, through Engineer, copies of the equipment rental agreements for Owner’s approval.

b) Should Contractor perform Work using rented construction equipment or machinery without Owner’s written approval of the associated rental agreement and the parties subsequently disagree on the applicable rental rates, use of such construction equipment and machinery will be compensated on the basis of the rental rate book indicated in Paragraph SC-13.01.B.5.c.(2).

c) When the rental rate book is used basis for determining compensation for construction equipment and machinery leased from a rental firm, the hourly rate for such equipment shall be determined in accordance with Paragraph 13.01.B.5.(2) of the General Conditions.

SC-13.01 Supplement Paragraph 13.01.B.5.c.(2) by adding the following sentence:

The equipment rental rate book that governs the included costs for the rental of machinery and equipment owned by Contractor (or a related entity) under the Cost of the Work provisions of this Contract is the most current edition of [name of equipment rental rate book].
Supplement Paragraph 13.01.B.5.c by adding the following subparagraphs:

4) Inactive Equipment and Machinery: Rental of construction equipment and machinery shall cease when the use thereof is no longer necessary for the Work. Periods of inactivity for such construction equipment or machinery will not be compensable unless agreed upon in writing by Owner, unless the costs of disassembly, removal, transportation, reassembly, and remobilization, as submitted to and accepted by Owner (with advice of Engineer) would exceed the cost of continuing to rent the item(s) during the period(s) of inactivity. Contractor is responsible for obtaining Owner’s written approval for compensation for construction equipment and machinery for periods of inactivity. Owner is not responsible for retroactively approving such inactivity. “Period of inactivity” for such items includes periods when the construction equipment or machinery is not used or necessary for the logical and efficient progression of the Work, or when other, available equipment or machinery is suitable for performing the given task.

5) Condition of Equipment and Machinery: Construction equipment and machinery will be compensable only for serviceable construction equipment and machinery capable of efficiently performing its intended function at the Site. Construction equipment and machinery not in compliance with this Paragraph SC-13.01.B.5.c) is not eligible for compensation.

6) Capped Compensation: Compensation paid Contractor for a given item of Contractor-owned construction equipment or machinery will be capped at, and shall not exceed, the comparable purchase price of such item of equal or comparable capacity and capability.

Supplement Paragraph 13.01.C.2 by adding the following definition of small tools and hand tools:

a. For purposes of this paragraph, “small tools and hand tools” means items in one or more of the following categories: (1) Items that are ordinarily required for the performing worker’s job function, including but not limited to equipment which ordinarily has no associated licensing, insurance, or substantive storage costs; such as hammers, wrenches, socket tools, manual saws, power saws, chainsaws, common power tools, impact drills, threaders, benders, transits and theodolites and related equipment, and other tools transportable by hand, regardless of ownership of such items; (2) Items such as gang-boxes, ladders, hand carts and similar wheeled items manually operated by workers, extension cords, and similar items; (3) common testing equipment such as insulation testers (megger-testing equipment), amp meters, gas detectors, pressure gauges, and similar items; (4) A purchase price (if purchased new, at retail) of $500, although such limit is not absolute, and certain items may be deemed by Owner or Engineer as “small tools or hand tools” (and not eligible for compensation) even though such item may have a purchase price greater than the amount indicated in this Paragraph 13.01.C.2.
Delete Paragraph 13.03.E in its entirety and insert the following in its place:

E. **Adjustments in Unit Price**

1. Contractor or Owner shall be entitled to an adjustment in the unit price with respect to an item of Unit Price Work if:
   
   a. the extended price of a particular item of Unit Price Work amounts to percent or more of the Contract Price (based on estimated quantities at the time of Contract formation) and the variation in the quantity of that particular item of Unit Price Work actually furnished or performed by Contractor differs by more than percent from the estimated quantity of such item indicated in the Agreement; and
   
   b. Contractor’s unit costs to perform the item of Unit Price Work have changed materially and significantly as a result of the quantity change.

2. The adjustment in unit price will account for and be coordinated with any related changes in quantities of other items of Work, and in Contractor’s costs to perform such other Work, such that the resulting overall change in Contract Price is equitable to Owner and Contractor.

3. Adjusted unit prices will apply to all units of that item.

E. **Adjustments in Unit Price**

1. Contractor or Owner shall be entitled to an adjustment in the unit price if the quantity on an individual bid item extends or fails to achieve [number] percent of the estimated quantity at the time of Contract formation plus any additions or deletions included in change orders to the contract.

2. The adjusted unit price will apply only to all units installed for that bid item.

### ARTICLE 14—TESTS AND INSPECTIONS; CORRECTION, REMOVAL, OR ACCEPTANCE OF DEFECTIVE WORK

No Supplementary Conditions in this Article.

### ARTICLE 15—PAYMENTS TO CONTRACTOR, SET OFFS; COMPLETIONS; CORRECTION PERIOD

15.01 **Progress Payments**

Add the following new Paragraph 15.01.F:

F. For contracts in which the Contract Price is based on the Cost of Work plus a fee, if Owner determines that progress payments made to date substantially exceed the actual progress of the Work (as measured by reference to the Schedule of Values), or present a potential conflict with the Guaranteed Maximum Price, then Owner may require that Contractor prepare and submit a plan for the remaining anticipated Applications for Payment that will bring payments and progress into closer alignment and take into account the Guaranteed Maximum Price (if any), through reductions in billings, increases in retainage, or other equitable measures. Owner will review the plan, discuss any necessary modifications, and implement the plan as modified for all remaining Applications for Payment.

15.03 **Substantial Completion**
SC-15.03 Add the following new subparagraph to Paragraph 15.03.B:

1. If some or all of the Work has been determined by Engineer not to be at a point of Substantial Completion and will require re-inspection or re-testing by Engineer or other entity retained by Owner, the cost of such re-inspection or re-testing, including the cost of time, travel and living expenses, will be paid by Contractor to Owner. If Contractor does not pay, or the parties are unable to agree as to the amount owed, then Owner may impose a reasonable set-off against payments due under this Article 15.

15.08 Correction Period

SC-15.08 Add the following new Paragraph 15.08.G:

G. The correction period specified as one year after the date of Substantial Completion in Paragraph 15.08.A of the General Conditions is hereby revised to be the number of years set forth in Paragraph SC-6.01.B.1; or if no such revision has been made in SC-6.01.B, then the correction period is hereby specified to be one (1) year after the date of Substantial Completion established in Engineer’s certificate of Substantial Completion.

ARTICLE 16—SUSPENSION OF WORK AND TERMINATION

No Supplementary Conditions in this Article.

ARTICLE 17—FINAL RESOLUTIONS OF DISPUTES

17.02 Arbitration

SC-17.02 Add the following new paragraph immediately after Paragraph 17.01.

SC-17.02 Arbitration

A. All matters subject to final resolution under this Article will be settled by arbitration administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules (subject to the conditions and limitations of this Paragraph SC-17.02). Any controversy or claim in the amount of $100,000 or less will be settled in accordance with the American Arbitration Association’s supplemental rules for Fixed Time and Cost Construction Arbitration. This agreement to arbitrate will be specifically enforceable under the prevailing law of any court having jurisdiction.

B. The demand for arbitration will be filed in writing with the other party to the Contract and with the selected arbitration administrator, and a copy will be concurrently sent to Engineer for information. The demand for arbitration will be made within the specific time required in Article 17, or, if no specified time is applicable, within a reasonable time after the matter in question has arisen, and in no event will any such demand be made after the date when institution of legal or equitable proceedings based on such matter in question would be barred by the applicable statute of limitations.

C. The arbitration will be held in the same municipality as the Owner’s principal office location.

D. The arbitrator(s) must be licensed engineers, contractors, attorneys, or construction managers. Hearings will take place pursuant to the standard procedures of the Construction Arbitration Rules that contemplate in-person hearings. The arbitrator(s) will have no authority to award punitive or other damages not measured by the prevailing party’s actual
damages, except as may be required by statute or the Contract. Any award in an arbitration initiated under this clause will be limited to monetary damages and include no injunction or direction to any party other than the direction to pay a monetary amount.

E. The Arbitrator(s) will have the authority to allocate the costs of the arbitration process among the parties, but will only have the authority to allocate attorneys’ fees if a specific Law or Regulation or this Contract permits them to do so.

F. The award of the arbitrator(s) must be accompanied by a reasoned written opinion and a concise breakdown of the award. The written opinion will cite the Contract provisions deemed applicable and relied on in making the award.

G. The parties agree that failure or refusal of a party to pay its required share of the deposits for arbitrator compensation or administrative charges will constitute a waiver by that party to present evidence or cross-examine witness. In such event, the other party shall be required to present evidence and legal argument as the arbitrator(s) may require for the making of an award. Such waiver will not allow for a default judgment against the non-paying party in the absence of evidence presented as provided for above.

H. No arbitration arising out of or relating to the Contract will include by consolidation, joinder, or in any other manner any other individual or entity (including Engineer, and Engineer’s consultants and the officers, directors, partners, agents, employees or consultants of any of them) who is not a party to this Contract unless:

1. the inclusion of such other individual or entity will allow complete relief to be afforded among those who are already parties to the arbitration;

2. such other individual or entity is substantially involved in a question of law or fact which is common to those who are already parties to the arbitration, and which will arise in such proceedings;

3. such other individual or entity is subject to arbitration under a contract with either Owner or Contractor, or consents to being joined in the arbitration; and

4. the consolidation or joinder is in compliance with the arbitration administrator’s procedural rules.

I. The award will be final. Judgment may be entered upon it in any court having jurisdiction thereof, and it will not be subject to modification or appeal, subject to provisions of the Laws and Regulations relating to vacating or modifying an arbitral award.

J. Except as may be required by Laws or Regulations, neither party nor an arbitrator may disclose the existence, content, or results of any arbitration hereunder without the prior written consent of both parties, with the exception of any disclosure required by Laws and Regulations or the Contract. To the extent any disclosure is allowed pursuant to the exception, the disclosure must be strictly and narrowly limited to maintain confidentiality to the extent possible.

17.03 Attorneys’ Fees

SC-17.03 Add the following new paragraph immediately after Paragraph 17.02.

SC-17.03 Attorneys’ Fees
A. For any matter subject to final resolution under this Article, the prevailing party shall be entitled to an award of its attorneys’ fees incurred in the final resolution proceedings, in an equitable amount to be determined in the discretion of the court, arbitrator, arbitration panel, or other arbiter of the matter subject to final resolution, taking into account the parties’ initial demand or defense positions in comparison with the final result.

ARTICLE 18—MISCELLANEOUS

18.08 Assignment of Contract

SC-18.08 Add the following new paragraph immediately after Paragraph 18.08.A:

B. The contract dated [________] between Owner as “buyer” and [________] as “seller” for procurement of goods and special services (“procurement contract”) will be assigned to Contractor by Owner, and Contractor will accept such assignment. A form documenting the assignment is attached as an exhibit to this Contract.

1. This assignment will occur on the Effective Date of the Contract, and will relieve the Owner as “buyer” from all further obligations and liabilities under the procurement contract.

2. Upon assignment, the “seller” will be a Subcontractor or Supplier of the Contractor, and Contractor will be responsible for seller’s performance, acts, and omissions, as set forth in Paragraph 7.07 of the General Conditions just as Contractor is responsible for all other Subcontractors and Suppliers.

3. Notwithstanding this assignment, all performance guarantees and warranties required by the procurement contract will continue to run for the benefit of the Owner and, in addition, for the benefit of the Contractor.

4. Except as noted in the procurement contract, all rights, duties and obligations of Engineer to “buyer” and “seller” under the procurement contract will cease upon the assignment to Contractor.

SC-18.11 Add a new paragraph immediately after Paragraph 18.10:

SC-18.11 Confidential Information

A. All Drawings, Specifications, technical data, and other information furnished to Contractor either by Owner or Engineer or developed by Contractor or others in connection with the Work are, and will remain, the property of Owner or Engineer, and shall not be copied or otherwise reproduced or used in any way except in connection with the Work, or disclosed to third parties or used in any manner detrimental to the interests of Owner or Engineer.

B. The following information is not subject to the above confidentiality requirements:

1. information in the public domain through no action of Contractor in breach of the Contract Documents; or

2. information lawfully possessed by Contractor before receipt from Owner or Engineer; or

3. information required to be disclosed by Laws or Regulations, or by a court or agency of competent jurisdiction. However, in the event Contractor shall be so required to disclose such information, Contractor shall, prior to disclosure, provide reasonable
notice to Owner and Engineer, who shall have the right to interpose all objections
Owner may have to the disclosure of such information.

SC-18.12   Add a new paragraph immediately after Paragraph 18.11, to read as follows:

SC-18.12   Publicity

A. Contractor shall not disclose to any third party the nature of its Work on the Project, nor
engage in publicity or public media disclosures with respect to the Project without the prior
written consent of Owner.
PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Location and description of Work and prior uses of the Site.
   2. Construction Contracts for this Project.
   3. Others retained by Owner for the Project.
   4. Work by others under Owner’s control on other projects.
   5. Work by others not under Owner’s control.
   6. Work by Owner.
   7. Sequence and progress of Work.
   8. Contractor’s use of the Site.
   11. Utility owners.
   12. Tree trimming, clearing, and tree removal.

B. Related Requirements:
   1. Include, but are not limited to, the following:
      a. 01 65 00 - Product Delivery Requirements
      b. 01 66 00 - Product Storage and Handling Requirements
      c. 01 71 14 - Mobilization and Demobilization

1.2 LOCATION AND DESCRIPTION OF WORK

A. The Work is located in Hailey, Idaho, and is located at the southern edge of the city limits to the base of the mountains to the northeast on Glenbrook Drive, which is on the eastern side of State Highway 75.

B. Work to be performed under this Contract includes, but is not limited to, installation of Owner Furnished Wedeco TAK55 H 6-3 ultraviolet (UV) disinfection system. Associated Work to be performed under this Contract includes modification of the existing concrete channels, installation of electronic slide gate actuators, installation of level transmitters, installation of channel drainage systems, and all other Work required in accordance with the Contract Documents.

C. The Work is located at the Woodside Water Reclamation Facility (Woodside WRF), 4297 Glenbrook Drive, Hailey, Idaho 83313.

D. The Project includes constructing the Work broadly described below, in accordance with the Contract Documents, with all related appurtenances. Work shown on the Drawings, or indicated in the Specifications, or indicated elsewhere in the Contract Documents is part of the Work, regardless of whether indicated below. The Work includes, but is not limited to, the following:
   1. Installation of Owner Furnished UV disinfection system.
   2. Modification of existing concrete channels
   3. Installation of electronic slide gate actuators
   4. Installation of level transmitters
   5. Installation of channel drainage systems

E. Contracting Method: The Project will be constructed under a single prime construction Contract.

F. Hazardous Environmental Conditions:
1. To the best of Owner’s knowledge, information, and belief, the prior use of the Site included wastewater treatment. The Filter/UV Building, the building in which the Work shall be completed, was constructed in 2000.

2. No known Hazardous Environmental Conditions, as described in the Supplementary Conditions, will (or has reasonable potential to) affect the Work.

G. Owner-Furnished Materials and Equipment:
1. Administrative and procedural requirements for Owner-furnished materials and equipment to be incorporated into the Work are in Section 01 64 00 - Owner-Furnished Products.

1.3 CONSTRUCTION CONTRACTS FOR THIS PROJECT
A. Single Prime Construction Contract: The Contract requires all the Work for the Project not expressly allocated to Owner or others in the Contract Documents.

1.4 OTHERS RETAINED BY OWNER FOR THE PROJECT
A. Engineer:
1. Engineer is identified in the Agreement.
2. Engineer’s responsibilities for the Project, relative to Contractor, are indicated throughout the Contract Documents.
3. Whether the Engineer will furnish the services of a Resident Project Representative (RPR) for the Project is indicated in the Supplementary Conditions.

B. Non-Professional Services Contracted by Owner: Owner will retain services of the following entities to perform the services indicated relative to the Project. Contractor shall coordinate and schedule the Work with, and cooperate with, the entities performing the following services for Owner.
1. Code-Required Special Inspections and Testing:
   a. Owner has, or will, retain the services of a qualified testing laboratory to perform code-required testing and special inspections for the Work, in accordance with provisions of the Contract Documents related to field testing.
   b. Identification: Code-required special inspections retained by Owner will be performed by Owner’s staffed licensed inspectors.
2. SCADA Configuration and Integration Services:
   a. Owner has, or will, retain the services of a qualified systems integration firm to perform SCADA configuration services and other information technology services relative to the Work.
   b. Identification: SCADA configuration and integration services will be performed by M.E.T. Technologies, the City of Hailey’s retained systems integrator.

1.5 WORK BY OWNER
A. Owner will perform the following in connection with the Work:
1. Operate all existing valves, flow-control gates, pumps, equipment, and appurtenances that will affect Owner’s operations or facility processes, unless otherwise specified or indicated.

1.6 SEQUENCE AND PROGRESS OF WORK
A. Sequencing:
1. Incorporate sequencing of the Work into the Progress Schedule.
2. Sequencing Requirements:
   a. West Channel (existing spare channel)
      1) Channel modifications in west channel (existing spare channel).
      2) Installation of UV disinfection equipment in west channel.
      3) Testing and validation of completed installation of all equipment in west channel.
         a) Owner shall put the newly completed UV disinfection system into service and take the existing UV disinfection system out of service.
      b. East Channel (existing service channel)
         1) Removal of existing UV disinfection system in east channel.
2) Channel modifications in east channel.
3) Installation of UV disinfection equipment in east channel.
4) Testing and validation of completed installation of all equipment in east channel.

c. Install electronic slide gate actuators.

B. Requirements for sequencing and coordinating with Owner’s operations, including maintenance of facility operations during construction, and requirements for tie-ins and shutdowns:
1. Work shall not interfere with the existing UV disinfection system until the west channel installation is completed and validated.
   a. There shall be no allowable shutdown of the existing UV disinfection system at any time prior to validation of the west channel UV disinfection system.
2. Work shall not interfere with Owner’s operators’ ability to enter or maintain equipment at the following locations:
   a. To the West:
      1) Chemical Room.
   b. To the North:
      1) SBR Equipment Room.
      2) Motor Control Center (MCC) and miscellaneous electrical equipment.
   c. To the East:
      1) Tertiary filters.
   d. To the South:
      1) W3 water booster pumps.

1.7 CONTRACTOR’S USE OF SITE

A. Use of Site - General:
1. Limits on Contractor’s use of the Site shall be coordinated with Owner once the Contract has been awarded, and as may be shown on the Drawings.
2. Contractors shall share use of the Site with other contractors and others specified in Articles 1.3 through 1.5 (inclusive) of this Section.
3. Relocate stored materials and equipment that interfere with operations of Owner, other contractors, and others performing work for Owner.
   a. Ensure Owner Furnished products are stored in compliance with Section 01 64 00 - Owner-Furnished Products and the manufacturer’s storage guidance such that warranties in effect are not voided.

B. Owner will occupy the Site jointly with Contractor during construction for performance of Owner’s typical operations. Coordinate with Owner in all construction operations to minimize conflicts between Contractor and Owner’s employees and others under Owner’s control. If the Site is a treatment facility or other production facility, Owner will have Owner’s suppliers for deliveries of chemicals and other items accessing the Site from time to time, possibly on a daily basis.

1.8 EASEMENTS AND RIGHTS-OF-WAY

A. Easements and Rights-of-Way - General:
1. Easements and rights-of-way required for the permanent improvements included in the Work will be provided by Owner in accordance with the General Conditions and Supplementary Conditions.
2. Confine construction operations within Owner’s property, public rights-of-way, easements obtained by Owner, and limits shown, and property for which Contractor has made arrangements directly with property owner(s).
3. Use care in placing construction tools, machinery and equipment, excavated materials, and materials and equipment to be incorporated into the Work to avoid damaging property and interfering with traffic.
4. Do not enter private property outside the construction limits without permission from the owner of the property.

B. On Private Property:
1. General limits of Owner-furnished easements are shown on the Drawings.

C. Within Highway and Railroad Rights-of-Way:
   1. Permits required for the permanent facilities will be obtained by Owner. Contractor shall obtain and pay for work permits and fees for safety and inspection forces to be furnished by the right-of-way owner.
   2. Work performed and Contractor’s operations within rights-of-way, including railroad and highway rights-of-way, shall comply with requirements of right-of-way owner and owners of facilities thereon, and with applicable work permits, and orders of authorities having jurisdiction over right-of-way.

1.9 PARTIAL UTILIZATION BY OWNER

A. Prior to Substantial Completion of the entire Work under the Contract, substantially complete the Work as follows:
   1. Work indicted for Milestones (if any).
      a. [______].
      b. [______].
      c. [______].

1.10 UTILITY OWNERS

A. Utilities known to Engineer and that may have Underground Facilities or other facilities in the vicinity of the Work are:
   1. None.

B. Utilities and their owners indicated in the Contract Documents are for Contractor’s convenience. Neither Owner nor Engineer will be liable to Contractor or any utility owner for failure to indicate utility, its owner, or complete and correct contact information in the Contract Documents where Contractor’s reasonable and ordinarily-exercised diligence would reveal the presence of the utility and its owner. Nothing in the Contract mitigates Contractor’s responsibilities under the General Conditions and Laws and Regulations, including “call before you dig” regulations.

PART 2 - PRODUCTS - (NOT USED)

PART 3 - EXECUTION - (NOT USED)

END OF SECTION
SECTION 01 25 00
SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Requirements applicable to all substitution requests.
   2. Provisions specific to Contractor’s substitution requests for:
      a. Materials and equipment to be incorporated into the Work.
      b. Methods, procedures, and sequences indicated in the Contract Documents.

B. Scope:
   1. Contractor shall provide all labor, materials, equipment, tools, services, and incidentals, and pay all costs associated with requests for approval of substitutes.
   2. Where the Contract Documents expressly indicate that substitutes are not allowed, are unacceptable, or time-barred, do not submit substitution requests for such items or procedures.
   3. Requirements for Contractor’s proposal of “or-equals”, where allowed by the Contract, are in the General Conditions, as may be modified by the Supplementary Conditions.

C. Related Requirements:
   1. Include, but are not necessarily limited to:
      a. Section 00 72 13 - General Conditions (EJCDC C-700—2018)
      b. Section 00 73 01 - Supplementary Conditions (EJCDC C-800—2018)

1.2 REFERENCES

A. Terminology:
   1. The following terminology, although not indicated with initial capital letters, has the following meaning in this Section:
      a. “Or-equal” and “or equal” each means material or equipment items to be incorporated into the completed Work as a functioning whole, or method, procedure, or sequence that, in Engineer’s sole opinion, are equivalent to that shown or indicated in the Contract Documents.
      b. “Substitute” means a proposed material or equipment to be incorporated into the completed Work as a functioning whole, or a proposed construction method, procedure, or sequence that is not, in Engineer’s sole opinion, equivalent to the associated, similar material or equipment item or method, procedure, or sequence shown or indicated in the Contract Documents, but accomplishes the same or similar purpose. Unless expressly indicated otherwise in the Contract Documents, Contractor’s proposals for “value engineering” (and similar terms) are substitutes.
      c. “Substitution request” means Contractor’s written request for Engineer’s approval of a proposed substitute, in accordance with this Section. Substitution requests are separate from Shop drawings and other Submittals required by the Contract Documents.

1.3 SUBSTITUTES - GENERAL

A. This Article applies to all substitutes and substitution requests, whether for substitute materials or equipment, or for substitute methods, procedures, or sequences.

B. This Section expands on the provisions on substitutes in the General Conditions, as may be modified by the Supplementary Conditions.

C. Time Limits for Submitting Substitution Requests:
1. Where the Contract allows Contractor’s substitution requests, such proposals will be considered by Engineer only during a period of 60 days after the date the Contract Times start to run, unless otherwise indicated.

2. Substitution requests will be accepted for consideration by Engineer after the time limit indicated in the paragraph above this, when materials or equipment shown or indicated, and all associated “or-equals”, are either:
   a. Unavailable; or
   b. Despite Contractor’s due diligent, are unavailable in time for the Work to be completed within the Contract Times.

3. The foregoing notwithstanding, substitutes will not be approved when received by Engineer after Contractor has commenced the associated Work at the Site, where approval of the substitute would require rework or removing Work already installed.

D. Design Professional:
1. Engineer is responsible for design of the completed Project as a functioning whole and has responsible charge of the Project except for Work for which design responsibility is expressly delegated by the Contract Documents.

2. Do not retain services of any third-party design professional to prepare modifications of Engineer’s design of the completed Project as a functioning whole without Engineer’s express, written consent via an appropriate Contract modification setting forth appropriate performance and design criteria for delegating the design of the substitute.

E. Contractor’s Representations:
1. In submitting each substitution request, Contractor represents that:
   a. Contractor has read and understands the Contract’s provisions on substitutes, as indicated in [the General Conditions, as may be modified by the Supplementary Conditions,] this Section, and elsewhere in the Contract Documents.
   b. Substitution request is complete and includes all documents and information required by the Contract Documents.
   c. Contractor certifications required by the General Conditions, as may be modified by the Supplementary Conditions, and this Section are valid and made with Contractor’s full knowledge, information, and belief.
   d. Contractor will provide the same or better guarantees and warranties for substitute as for the specified materials, equipment, methods, procedures, and sequences (as applicable).
   e. Contractor waives all rights for increasing the Contract Price or extending the Contract Times, related to the substitute, that subsequently may become apparent to Contractor after issuance of the associated Contract modification instrument approving such substitute, except for those associated with differing subsurface or physical conditions or discovery of a previously unforeseen Hazardous Environmental Condition associated with the Work involving the approved substitute.

F. Submittal of Substitution Requests - General:
1. Substitution requests must be submitted by Contractor. Engineer will not accept or review substitution requests from prospective or bona-fide Subcontractors or Suppliers.

2. Submit separate substitution request for each proposed substitute.

3. Submit substitution requests in accordance with requirements for Shop Drawings and other Submittals, as indicated in the General Conditions, as may be modified by the Supplementary Conditions, and Section 01 33 00 - Submittal Procedures.

4. Do not submit substitution requests as any of the following (such substitution requests will be returned by Engineer without review):
   a. Shop Drawing, Sample, or other Submittal.
   b. Request for approval of an “or-equal”.
   c. Request for interpretation (RFI) or clarification.
   d. Change Proposal without all other, required substitution request elements indicated below.
   e. Other oral or written communication not in accordance with this Section.
5. Each substitution request shall include:
   a. Transmittal letter (one per substitution request) expressly indicating the communication is a substitution request.
   b. Completed substitution request form, on the form attached to this Section.
   c. Change Proposal, submitted in accordance with the Contract Documents. Clearly indicate the proposed changes in Contract Price and Contract Times if substitute is approved; if none, clearly so indicate on the Change Proposal.
   d. Certifications and written representations required by the Contract Documents to accompany substitution requests.
   e. Other information: (1) required elsewhere in this Section and in other elements of the Contract Documents, and (2) deemed appropriate by Contractor to support Contractor’s substitution request.

6. When Engineer requires additional information to evaluate a substitution request, furnish such information within five days of receipt of Engineer’s request, unless additional time is granted by Engineer, in writing.

7. Engineer and Owner have the right to rely upon the completeness and accuracy of information, documents, certifications, and representations in Contractor’s substitution request. Contractor accepts full responsibility for completeness and accuracy of substitution requests (except for Engineer’s professional liability).

G. Engineer’s Review of Substitution Requests:
   1. Engineer has no obligation to approve any substitute.
   2. Substitutes will not be approved unless all of the following are satisfied for the associated substitute:
      a. The Contract supports submittal of such substitution request; and
      b. Substitute is reasonably consistent with Engineer’s design intent for the Project as a completed, functioning whole; and
      c. As indicated in Paragraph 1.3.A.3 of this Section.
      d. Substitute will not have an adverse effect on the work of other contractors, or existing or proposed construction; and
      e. Substitution request is complete in accordance with the Contract Documents and Engineer’s requests, and
      f. Owner agrees to the substitute; and
      g. Associated changes in Contract Price and Contract Times, if any, are acceptable to Owner.
   3. Engineer is not obligated to approve any substitute where such approval is conditioned on an increase in the Contract Price, the Contract Times, or both.
   4. Timeliness of Engineer’s Review:
      a. Allow not less than 14 days for Engineer’s review of each substitute. Allow longer for larger, more-complex substitutes.
      b. Engineer will endeavor to perform timely review of substitution requests. However, Contractor is responsible for complying with the Contract Times, regardless of whether the substitute is approved.
      c. Where approval of a substitute would necessitate other changes to the Project’s design, additional time, beyond that indicated above, will be necessary for Engineer’s preparation of revisions to the design.
   5. When Design Changes are Required with Approval of Substitute:
      a. Engineer will advise Contractor promptly following Engineer’s review (and Owner’s comment, if any) on substitution request to indicate whether the substitute will be acceptable. Engineer’s advisory to Contractor will indicate whether changes in Engineer’s design are necessary and include a preliminary estimate of Engineer’s fee and time required for modifying the design and preparing an associated Proposal Request to Contractor.
      b. Engineer’s preliminary estimates of fee and time for design modifications will be prepared in good faith, but are not binding on Owner or Engineer.
c. Contractor shall reimburse Owner for costs incurred by Owner for design modifications necessitated by approval of substitute. Owner may deduct such amounts, as one or more set-offs, from payments due Contractor under the Contract.
d. Upon Contractor’s receipt of Engineer’s estimate of fee and time for design modifications, contractor shall advise Engineer, in writing, within three days whether Contractor will continue pursuing approval of the substitute.
e. Request to Contractor.
f. Engineer may reject a substitute that would require substantial changes in the Project’s design.

H. Approval of Substitutes:
1. Substitutes are approved only via issuance of an appropriate Field Order or Change Order in accordance with and the General Conditions, as may be modified by the Supplementary Conditions.
2. Approval of a substitute does not relieve Contractor from obligation to comply with the Contract Documents, including submitting Shop Drawings, Samples, and other Submittals in accordance with the Contract Documents.

1.4 SUBSTITUTE MATERIALS AND EQUIPMENT
A. In addition to other requirements of this Section and elsewhere in the Contract Documents, substitution requests for substitute materials or equipment shall include:
1. Manufacturer and Location:
   a. Name and address of manufacturer of the proposed substitute. Indicate country where manufacturer is incorporated and owned.
   b. Companies and brands owned by or affiliated with manufacturer.
   c. Name of manufacturers of principal component items, such as motors, bearings, and similar items.
   d. Location where the items would be manufactured, including country and address. Indicate the total percentage of the items’ value that will be manufactured outside of the United States and its territories.
   e. Name, address, and driving distance from the Site of:
      1) Manufacturer’s sales representative.
      2) Nearest service center offering full array of service capabilities.
      3) Warehouse or other location where spare parts for the proposed substitute are available.
   f. Number of years that manufacturer has actively participated the North American market.
2. Proposed Materials and Equipment:
   a. Model designation and quantity of each proposed for the Work.
   b. Manufacturer’s literature for proposed substitute, with description of the materials and equipment.
   c. Performance information and representative test data.
   d. Indication of reference standards with which materials and equipment comply.
   e. Preliminary process and instrumentation diagrams (P&ID), where applicable.
   f. Identification of hazardous materials, including Constituents of Concern, used in the materials and equipment, and associated permitting or licensing required.
   g. Manufacturer’s standard warranty and applicable, proposed special or extended warranties, including indication of specific entities that will be beneficiary of such warranties.
   h. Complete list of proposed deviations from requirements of the Contract Documents.
   i. Itemized comparison of specified materials and equipment and proposed substitute, indicating:
      1) Size (physical dimensions) when: item is in use, when not in use, and space required for routine and major maintenance.
      2) Weight and loading at supports, when item is full and empty.
      Materials of construction.
3. Operation requirements, including:
   a. Anticipated consumption of each item of: Electricity, other energy sources, water, chemicals (indicate each), and other needs for operation at the Site.
   b. Typical labor required for operation and associated skill level.
   c. Description of remote monitoring and control capabilities, as applicable.
4. Maintenance requirements, including:
   a. Anticipated life in the service and environment required.
   b. Frequency and general scope of routine and major maintenance typically necessary.
   c. Typical labor requirements and general qualifications of personnel performing routine maintenance.
   d. Major, associated equipment necessary for routing and major maintenance, including hoisting equipment type and capacity (when applicable).
   e. Availability, scope, cost, and general conditions of service and maintenance contracts, if any.
5. References for similar projects on which the materials and equipment were used. Indicate for each:
   a. Project owner name, name of facility where installed, and name of project.
   b. City, state, and country of installation.
   c. Model number/size and quantity furnished and installed.
   d. Year of installation.
   e. Contact information for owner and design professional, including telephone numbers.
6. Other information required by the Contract Documents.
7. Other information reasonably requested by Engineer.

1.5 SUBSTITUTE CONSTRUCTION METHODS, PROCEDURES, OR SEQUENCES

A. Provisions of the General Conditions, as may be modified by the Supplementary Conditions, regarding substitutes of materials and equipment are hereby extended to apply to substitute methods, procedures, and sequences as shown or indicated in the Contract Documents.

B. In addition to other requirements of this Section and elsewhere in the Contract Documents, substitution requests for substitute methods, procedures, or sequences shall include:
   1. Clear identification of the method, procedure, or sequence shown or indicated in the Contract Documents for which substitute is requested.
   2. Detailed description of proposed substitute method, procedure, sequence, or combination thereof.
   3. Reasons why substitute is proposed and benefits to the Project should the substitute be approved.
   4. Detailed list of how the proposed substitute deviates from associated method, procedure, or sequence shown or indicated in the Contract Documents.
   5. Impact of the substitute, if approved, on Owner’s or facility manager’s operations, when the Work is at an existing facility.
   6. Effect on other contractors working at the Site, if substitute is approved.
   7. Description of temporary equipment and temporary facilities needed, should the substitute be approved, including quantity of items, capacities, performance characteristics, permitting and approvals required by authorities having jurisdiction, and proposed location at the Site.
   8. Written evaluation of how substitute method, procedure, or sequence complies with Laws and Regulations.
   9. Drawings illustrating method, procedure, or sequence.
   10. Materials to be used that contain Constituents of Concern or that have potential to cause or exacerbate a Hazardous Environmental Condition.
   11. Other information and data required by the Contract Documents.
   12. Other information reasonably required by Engineer.
PART 2 - PRODUCTS - (NOT USED)

PART 3 - EXECUTION

3.1 ATTACHMENTS

A. The following, bound after this Section’s “End of Section” designation, are part of this Specifications Section:
   1. Exhibit A - Substitution Request Form (one page).

END OF SECTION
## Substitution Request Form

(One Item per each Form)

<table>
<thead>
<tr>
<th>Project:</th>
<th>Date:</th>
</tr>
</thead>
</table>

**Substitution Requestor:**

**Contractor:**

<table>
<thead>
<tr>
<th>Specification Section No:</th>
<th>Paragraph No. (i.e. 2.1.A.1.e):</th>
<th>Specified Item:</th>
</tr>
</thead>
</table>

**Proposed Substitution:**

- Provide Product Data Sheets, Manufacturer’s written installation instructions, drawings, diagrams, or any other information as an attached to this Form that will demonstrate the proposed substitution is an Approved Equal.

- State differences between proposed substitutions and specified item. Differences include but are not limited to interrelationship with other items; materials, equipment, function, utility, life cycle costs, applied finished, appearances, and quality.

- Document how the proposed substitution is compatible with or modifies other systems, parts, equipment or components of the Project and Work under the Contract.

- Describe what effect the proposed substitution has on dimensions indicated on the Drawings and previously reviewed Shop Drawings?

- Describe what effect the proposed substitution has on the Construction Schedule and Contract Time.

- Describe what effect the proposed substitution has on the Contract Price. This includes all direct, indirect, impact and delay costs.

- Manufacturer’s guarantees of the proposed and specified items are:
  - [ ] Same
  - [x] Different (explain on attachment)

- The undersigned state that the function, utility, life cycle costs, applied finishes, appearance and quality of the proposed substitution are equal or superior to those of the specified item.

For use by Engineer:

- [ ] Accepted – eligible for approval via Change Order
- [ ] Accepted as Noted – approval via Change Order
- [ ] Not Accepted

(Date) (Telephone): 

(Contractor’s Signature) (Contractor’s Firm) (Firms Address) (Telephone)

Signature of PE, RA, or PG in Responsible Charge

Comments:

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SECTION 01 29 73
SCHEDULE OF VALUES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Requirements for the Schedule of values, including:
      a. Applicability.
      b. General provisions for Schedules of Values.
      c. Format, organization, and content of Schedule of Values.

B. Related Requirements: Include but are not necessarily limited to:
   1. Section

1.2 PRICE AND PAYMENT PROCEDURES

A. Schedule of Values and Payment – General:
   1. Contractor shall prepare and submit to Engineer for acceptance Schedule of Values that presents (as applicable): (a) an appropriate, detailed breakdown of the price of lump sum bid/pay items, and (b) an appropriate, detailed breakdown of the price of Work compensated on the basis of Cost of the Work plus a fee, and (c) lists bid/pay items of Unit Price Work. The total of all Work among the various bid/pay items shall equal the Contract Price.
   2. For each item of lump sum Work and Work compensated on the basis of Cost of the Work plus a fee, the Schedule of Values shall, establish in detail the portion of the Contract Price allocated to each component of such Work.
   3. Upon request of Engineer, promptly furnish data and information that substantiates and supports the amounts indicated in the Schedule of Values.
   4. Submit preliminary Schedule of Values to Engineer for initial review. Contractor shall incorporate Engineer’s comments into the Schedule of Values and resubmit to Engineer. Engineer may require corrections and re-submittals until Schedule of Values is acceptable.
   5. Schedule of Values may be used, where appropriate, as a basis for negotiating price of changes, if any, in the Work.

B. Applicability:
   1. Lump Sum Work:
      a. For Work paid on a lump sum basis, progress payments will be on the basis of Work performed in accordance with the Contract Documents, for each line item in the Schedule of Values, as recommended to Owner by Engineer.
   2. Work Compensated on the Basis of Cost of the Work Plus a Fee:
      a. Such Work will be paid, based on Engineer’s recommendation to Owner, based on documentation of eligible costs submitted by Contractor with progress payment requests, in accordance with the General Conditions (as may be modified by the Supplementary Conditions).
      b. Schedule of Values accepted by Engineer will be used by Engineer in evaluating reasonableness of Contractor’s progress payment requests.
      c. While the actual Cost of the Work plus applicable fee for a given line item in the Schedule of Values may vary somewhat from the scheduled amount of such line item, where actual Cost of the Work (plus fee) for such line item differs substantially from the scheduled amount of such line item indicated in the Schedule of Values, Engineer may refuse to recommend further payment for such line item, in accordance with the Contract Documents.
      d. Nothing in the Schedule of Values accepted by Engineer changes the Guaranteed Maximum Price, if any.
   3. Unit Price Work:
a. Breakdown of unit prices (whether in a Schedule of Values or elsewhere) into detailed cost or price components is not required.
b. Unit Price Work will be measured for payment in accordance with the Contract Documents.

1.3 ADMINISTRATIVE PROCEDURES

A. General Provisions for Schedules of Values:
   1. This Section augments requirements for the Schedule of Values, indicated in the General Conditions, as may be augmented by the Supplementary Conditions.

1.4 SUBMITTALS

A. Informational Submittals: Submit the following:
   1. Submit to Engineer the Schedule of Values in the form and quantity required in Section 01 33 00 - Submittal Procedures.
   2. Content of Schedule of Values Submittals shall be in accordance with this Section.

B. Timing of Submittals:
   a. Preliminary Schedule of Values:
       1) Submit preliminary Schedule of Values within time limit indicated in the General Conditions.
   b. Initial Acceptable Schedule of Values:
       1) Revise the preliminary Schedule of Values in accordance with Engineer’s comments.
       2) Contractor will not be eligible for progress payment until acceptable Schedule of Values is submitted in accordance with the Contract Documents.
       3) Submit the Schedule of Values acceptable to Engineer in accordance with the General Conditions.
   c. Updates: Submit updated Schedule of Values when:
       1) The Contract Price has changed.
       2) Requested by Engineer.

1.5 FORMAT, ORGANIZATION, AND CONTENT OF SCHEDULE OF VALUES

A. Organization and Major Elements of Schedule of Values.
   1. Prepare Schedule of Values on the “progress estimate” or “continuation sheets”, as applicable.
   2. Include in Schedule of Values itemized list of Work for each major work area included in the Work, for each lump sum payment item included in the Contract.
      a. Contractor will not be eligible for progress payment until acceptable Schedule of Values is submitted in accordance with the Contract Documents.
   3. In addition, list either in the Schedule of Values or on a separate worksheet included with Applications for Payment all Unit Price Work bid/pay items in the Contract. The balance of this Article applies to lump sum Work and Work compensated on the basis of Cost of the Work plus a fee.
   4. Organization in Accordance with Specification Sections:
      a. Within each work area, organize the Schedule of Values by the various Specifications section numbers and titles included in the Contract Documents.
      b. Label each row in the Schedule of Values with the appropriate Specifications section number. Include an amount for each row in the Schedule of Values.
      c. List sub-items of major materials, equipment, or systems, as appropriate or when requested by Engineer.

B. Requirements for both the preliminary Schedule of Values Submittal and the Schedule of Values Submittal for Engineer’s acceptance are:
   1. Subcontracted Work:
      a. Schedule of Values shall indicate division of Work between Contractor and each Subcontractor.
b. Line items for Work to be performed by each Subcontractor shall include the word, “(SUBCONTRACTED)” and the name of the Subcontractor once the associated subcontract is signed and effective.

2. Apportionment between Materials and Equipment, and Installation: Schedule of Values shall include separate apportionment of costs for:
   a. Cost of materials and equipment to be incorporated into the completed construction.
   b. Cost of delivery, handling, and storage of materials and equipment to be incorporated into the completed construction.
   c. Cost of temporary materials (such as excavation supports, scaffolding, and other temporary materials), and their associated delivery, handling, and storage costs, if any.
   d. Cost of rentals of construction equipment and machinery, whether owned by Contractor or Subcontractor or leased from a third-party equipment rental entity.
   e. Cost of installing materials and equipment.
   f. Travel and subsistence costs, if any.
   g. Other costs used in preparing the Bid by Contractor and each Subcontractor.

3. Sum of individual line item amounts indicated on the Schedule of Values shall equal the total of associated bid/pay item. Sum of bid/pay item totals in the Schedule of Values, plus the sum of any separate listing of Unit Price Work items, shall equal the total Contract Price.

4. Overhead and Profit:
   a. Include in each line item a directly proportional amount of Contractor’s overhead and profit in the Contract Price.
   b. Do not include overhead and profit as separate line item(s).

5. Allowances: Include separate line item for each allowance.

6. Unit Price Work: Separately indicate items of Unit Price Work in the overall Schedule of Values. Where the required form includes a separate worksheet or page for Unit Price Work, indicate all items of Unit Price Work on such worksheet or page of the form.

7. Bonds and Insurance Costs:
   a. Include line item for bonds and insurance in bid/pay item for [indicate bid/pay item], in amount not greater than 1.5 percent of the total Contract Price.
   b. When greater than the amount stipulated immediately above is proposed by Contractor in the Schedule of Values, submit to Engineer documentation substantiating the proposed amounts. Submit to Engineer such documentation when otherwise requested by Engineer.
   c. When Contractor has furnished performance and payment bonds and evidence of insurance acceptable to Owner and in accordance with the Contract Documents, entire amount for bonds and insurance may be applied for in the first Application for Payment.

8. Construction Support, Project Management, and Administrative Cost Elements:
   a. Costs under this category are sometimes informally referred to as “field overhead”, but are Project costs rather than costs related to Contractor’s general business operations.
   b. Include in the Schedule of Values relevant line items and amounts for work and services required by the General Conditions and specific Division 01 Specifications sections, such as:
      1) Project management costs.
      2) Onsite superintendence and supervision costs.
      3) Itemized list of Work by work area, as applicable, for costs associated with coordination with the Owner’s operations, including required sequencing, as set forth in the Contract Documents.
      4) Updating the construction Progress Schedule, preparing time impact analyses, and preparing recovery schedules. Preparation of preliminary Progress Schedule and the initial (“baseline”) Progress Schedule acceptable to Engineer are part of mobilization.
      5) Construction progress photographic documentation. Preconstruction photographic documentation and final photographic documentation are, respectively, part of mobilization and demobilization.
6) Updates of the Schedule of Submittals.
7) Contractor’s safety representative and ongoing implementation of Contractor’s Site-specific health and safety plan (SSHASP). Establishing the SSHASP is part of mobilization.
8) Ongoing compliance with permits (when applicable). Contractor’s securing of required work permits is part of mobilization.
9) Ongoing cost for temporary utilities and temporary facilities. Establishing such services and facilities is part of mobilization.
10) Ongoing costs for temporary security.
11) Field offices (monthly rental and maintenance) and storage facilities (excluding costs of establishment and removal, which are part of mobilization and demobilization).
12) Ongoing site maintenance, such as temporary controls (dust, air pollution, water pollution, solid waste control, pest and rodent control, temporary erosion and sediment controls, and others), snow and ice removal, and similar activities.
13) Field engineering and surveying.
14) Progress cleaning and cleaning for Substantial Completion.
15) Record documents (preparation, maintenance, and submittal).
   a) If adequate record documents are maintained, up to 50 percent of the value of the record documents line item will be eligible for payment, spread evenly over those progress payments in which construction at the Site is performed.
   b) Remainder of Project record documents line item will be eligible for payment when complete record documents are submitted in accordance with the Contract Documents.
   c) If record documents submitted are unsatisfactory to Engineer, amount may be reduced via set-offs in accordance with the Contract Documents.
16) Other items required by Engineer.
   c. Include such items in Applications for Payment on payment schedule acceptable to Engineer.
   d. Such line items in the Schedule of Values shall exclude any and all costs associated with Contractor’s permanent place(s) of business, personnel stationed at permanent office(s), salaries and bonuses of executive and administrative personnel not directly performing work on the Project, and general business expenses, all of which are part of Contractor’s overhead costs.
9. Mobilization and Demobilization: In accordance with Section 01 71 14 - Mobilization and Demobilization.
10. Mobilization and Demobilization: Include all associated costs in the separate bid/pay item for mobilization and demobilization.
11. Mobilization and Demobilization:
   a. Include separate line items under each appropriate lump sum bid/pay item for mobilization and demobilization.
   b. Document for Engineer the activities included in mobilization and demobilization line items.
   c. Mobilization includes:
      1) Obtaining Owner’s acceptance of proposed Subcontractors and Suppliers and entering into subcontracts and purchase orders needed to start the Work.
      2) Preparing and obtaining Engineer’s approval of Shop Drawings.
      3) Preparing and obtaining Engineer’s acceptance of schedules, including Progress Schedule, Schedule of Submittals, and Schedule of Values.
      4) Preconstruction conference(s) required by the Contract Documents.
      5) Preconstruction photographic documentation.
      6) Establishing Contractor’s Site-specific health and safety plan, preconstruction activities needed to start implementing Contractor’s safety programs, and verifying status of training of construction workers and personnel and condition of construction equipment, machinery, and tools.
    7) Submitting acceptable emergency contact information
8) Obtaining required permits needed to start the Work.
9) Initial establishment of temporary utilities and temporary facilities.
10) Establishing Contractor’s field office and sheds, Contractor’s storage areas, staging and laydown areas, and other areas necessary to perform the Work.
11) Initial establishment of construction vehicular access to the Site, parking needed for construction, and offsite haul routes.
12) Establishing construction equipment, machinery, and tools at the Site.
13) Providing initial temporary controls.
14) Establishing temporary security needed to start Work at the Site.
15) Other mobilization acceptable to Engineer.

d. Mobilization will be limited to [_____] percent of the Contract Price, and will be paid in [_____] payments, each of [_____] percent of total amount for mobilization. Should Contractor propose mobilization in an amount greater than the limit indicated in this paragraph or on an alternative schedule from that indicated in this paragraph, submit to Engineer for acceptance information and documentation sufficient to support and substantiate the proposed amount and payment schedule for mobilization.

a. Demobilization includes:
1) Removal from the Site and adjacent areas of excess materials and equipment.
2) Removal of temporary controls, temporary facilities, temporary barriers, and similar materials and equipment.
3) Removal of temporary access roads and parking areas not part of permanent pavement or otherwise allowed to remain by Owner, including temporary traffic controls established for construction vehicles and equipment.
4) Removal of all field office and sheds, storage areas, staging and laydown areas, and other areas needed to perform the Work and restoration of such areas.
5) Removal from the Site of all construction equipment, machinery, tools, Contractor’s containers, temporary fuel storage tanks, and similar items.
6) Closeout of permits on which Contractor is a permittee or co-permittee.
7) Final cleaning.
8) Furnishing required closeout documents.
9) Other costs and effort by Contractor for demobilization.

b. Demobilization shall be not less than [_____] percent of the Contract Price and shall be included with the Application for Payment following Substantial Completion, or other schedule acceptable to Engineer.

12. Costs for Submittals, field quality control activities, and training of operations and maintenance personnel shall be as follows, unless otherwise accepted by Engineer:

a. Submittals: Up to 8.0 percent of cost (including all associated overhead and profit) of each equipment item, exclusive of transportation and installation costs associated therewith, may be allocated to preparation of Shop Drawings, Samples, and other Submittals required for release for purchase, fabrication, or delivery (as applicable) and may be included in the Application for Payment following Engineer’s approval of Shop Drawings (and acceptance of other Submittals, as applicable) required for fabricating or purchasing for that item for the Work.

b. Field Quality Control: Up to 3.0 percent of total cost of each item (including all associated overhead and profit), including materials and equipment, and installation, may be apportioned to specified or required field quality control activities (including required testing and inspections) and included in the Application for Payment following Engineer’s acceptance of the associated written field quality control report Submittal(s).

c. O&M Manual Submittals and Training: Up to a total of 4.0 percent of equipment cost (including all associated overhead and profit), exclusive of transportation and installation costs, may be apportioned to operations and maintenance manuals and training of operations and maintenance personnel, which may be included in the Application for Payment following completion of training for the associated item.
PART 2 - PRODUCTS - (NOT USED)

PART 3 - EXECUTION - (NOT USED)

END OF SECTION
PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Definition of various types of Submittals.
2. Coordination requirements for Submittals.
4. Schedule of Submittals.
5. Contractor’s preparation of Submittals, including:
   a. Numbering.
   b. Marking.
   c. Organization and content.
   d. Proposed “or-equals”, substitutes, and deviations from Contract requirements.
   e. Electronic Documents Submittals.
   f. Contractor’s review and approval of each Submittal.
   g. Resubmittals.
6. Contractor’s transmittal of Submittals, including transmittal letters, transmittal and delivery method, and delivery of Samples, Closeout Submittals, and Maintenance Materials Submittals.
7. Engineer’s review, including:
   a. Timing.
   b. Meaning of Engineer’s Submittal action code(disposition) assigned.
   c. Delivery of Engineer’s responses on Submittals.

B. Scope:
1. Contractor shall provide all labor, materials, equipment, tools, services, incidentals, and other effort necessary to furnish Shop Drawings, product data Submittals, Samples, and other Submittals in accordance with the Contract Documents.
2. This Section’s Article, “General Provisions Concerning Submittals” includes a summary of the Contract Documents’ locations of Submittals requirements.
3. Shop Drawings, product data Submittals, Samples, and other Submittals, whether or not approved or accepted by Engineer, are not Contract Documents. Engineer’s approval or acceptance, as applicable, of a Submittal does not alter or modify the Contract Documents.
4. Engineer and Owner have the right to rely on Contractor’s representations and certifications made regarding each Submittal.

C. Related Requirements: Include but are not limited to:
1. Section 01 25 00 - Substitution Procedures.

1.2 REFERENCES

A. References – Introduction:
1. This Article presents definitions and terminology used in this Section and throughout the Contract Documents.
2. Applicability of the Term “Submittals”: Where reference is made to Shop Drawings, product data Submittals, Samples, or other Submittals in this Section and elsewhere in the Contract Documents, the term “Submittals”, as defined in the Contract Documents, is intended. The foregoing applies regardless of whether such term is indicated with an initial capital letter, unless context of the subject provision clearly indicates otherwise.
3. Types of Submittals:
   a. Submittal types are classified as follows: (1) Action Submittals, (2) Informational Submittals, (3) Closeout Submittals, and (4) Maintenance Materials Submittals.
b. Type of each required Submittal is indicated in the associated Specifications section. When Submittal type is not clearly indicated in the associated Specifications section, Submittal will be classified as indicated in this Article. Submit request for interpretation when Contractor is uncertain of required Submittal type.

B. Action Submittals:
1. Action Submittals require an explicit, written approval or other appropriate action by Engineer (or other entity to whom the Submittal is required to be furnished, in accordance with the Contract Documents) before Contractor may release the associated item(s) for raw materials procurement, fabrication, production, and shipping.
2. Unless otherwise indicated in the Contract Documents, Action Submittals include the following:
   a. Shop Drawings.
   b. Product data.
   c. Samples.
   d. Testing plans for quality control activities required by the Contract Documents.
   e. Delegated Designs: Delegated design professional’s “instruments of service” Submittals required by the Contract Documents.
3. General Conditions’ requirements for Shop Drawings and Samples hereby apply to all Action Submittals.

C. Informational Submittals:
1. Informational Submittals are so indicated in the Contract Documents. Unless otherwise indicated, Informational Submittals include certifications, evaluation reports, results of source quality control activities, results of field quality control activities, Supplier instructions, reports of Suppliers’ visits to the Site, sustainable design Submittals (that are not Closeout Submittals), delegated design Submittals that are not “instruments of service” Submittals, qualifications statements, and others.
2. Informational Submittals, when submitted in accordance with the Contract and indicating full compliance with the Contract Documents, do not require explicit response from Engineer (or other entity to whom the Submittal is to be delivered); Engineer’s (or other entity’s) acceptance thereof will be indicated in the Engineer’s Submittals log. Copy of Engineer’s Submittals log is available to Contractor upon Contractor’s written request.
3. When Informational Submittal does not indicate full compliance with the Contract Documents, Engineer (or other entity to which Submittal is to be delivered) will indicate the non-compliance in a written response to Contractor.

D. Closeout Submittals:
1. Closeout Submittals are so indicated in the Contract Documents and are, in general, required before the associated Work is completed, unless earlier submittal is required by the Contract Documents.
2. Unless indicated otherwise in the Contract Documents, Closeout Submittals include maintenance contracts, operation and maintenance data, warranties, bonds (other than performance and payment bonds required prior to the start of construction), record documents, sustainable design closeout Submittals, software, keys, and others.
3. Closeout Submittals are processed in the same manner as described above for Informational Submittals.

E. Maintenance Materials Submittals:
1. Maintenance materials include spare parts, extra materials, tools, and similar items required to be furnished in accordance with the Contract Documents.
2. Furnish required physical maintenance materials, delivered to Owner or facility manager (if other than Owner), as applicable, at the location(s) indicated in the Contract Documents, for the corresponding required Maintenance Materials Submittals.
3. Maintenance Materials Submittals are documentation of delivery to Owner’s or facility manager, and their acceptance of, required physical maintenance materials.
4. Maintenance Materials Submittals are processed in the same manner as described above for Informational Submittals.

F. Additional Terms:
   1. The following terms have the meanings indicated below, regardless of whether such terms are indicated using initial capital letters, and apply to singular and plural of each:
      a. “Product data” means illustrations, standard schedules, performance charts, Supplier’s published instructions, brochures, diagrams, and other information furnished by Contractor to illustrate or describe materials or equipment for some portion of the Work. In general, product data are manufacturers’ pre-published information on the items proposed to be incorporated into the Work. Product data includes manufacturer’s catalog pages and similar documents with contractor-made markings and indications of proposed products and proposed options.
      b. The term “Shop Drawings”, defined in the General Conditions, is supplemented by the following: Shop Drawings include: (1) fabrication and assembly drawings, usually having a title block, or (2) schedules, prepared specifically for the Project. Here, “schedules” means a Project-specific summary of systems and components, such as a schedule of HVAC equipment, schedules of doors and door hardware, or windows, or a schedule of paint systems by room and surface, or other, similar Project information in a tabular format. In contrast, construction Progress Schedules, Schedules of Submittals, and Schedules of Values are not Shop Drawings.

1.3 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
   1. Furnish Submittals well in advance of need for the associated material or equipment, or procedure (as applicable), in the Work and with ample time necessary for delivery of materials and equipment and to implement procedures following Engineer’s approval or acceptance of the associated Submittal.
   2. Work covered by a Submittal will not be included in payments by Owner until approval or acceptance (as applicable) of related Submittals has been obtained in accordance with the Contract Documents.

1.4 GENERAL PROVISIONS CONCERNING SUBMITTALS

A. Locations of Requirements:
   1. Requirements concerning Submittals are generally located as follows:
      a. General Conditions, as may be modified by the Supplementary Conditions, applicable to the Project.
      b. This Section, which presents general requirements for Submittals applicable to the Project.
      c. Other Division 01 Specifications that include general requirements for certain types of Submittals.
      d. The “Submittals” Article of the various Specifications sections, which indicates the required Submittals for the associated Work. Furnish all Submittals required by the Contract Documents regardless of whether explicitly indicated in the associated Specifications’ “Submittals” Article.

B. This Section augments and supplements the requirements of the General Conditions, as may be modified by the Supplementary Conditions, relative to Submittals.

1.5 SCHEDULE OF SUBMITTALS

A. Informational Submittals: Submit the following:
   1. Schedule of Submittals:
      a. Timing:
         1) Furnish Schedule of Submittals within time frames indicated in the General Conditions, as may be modified by the Supplementary Conditions.
2) Submit updated Schedule of Submittals with each submittal of the updated Progress Schedule.

b. Content: In accordance with the General Conditions, as may be modified by the Supplementary Conditions, and this Section. Requirements for content of preliminary Schedule of Submittals and subsequent Submittals of the Schedule of Submittals are identical. Identify on Schedule of Submittals all Submittals required in the Contract Documents. Updates of Schedule of Submittals shall show scheduled dates and actual dates for completed tasks. Clearly indicate Submittals that are on the Project’s critical path. Indicate the following for each Submittal:
   1) Date by which Submittal will be received by Engineer.
   2) Whether Submittal will be for a substitution or “or-equal”.
   3) Date by which Engineer’s response is required. Allow not less than 14 days for Engineer’s review, starting on Engineer’s actual receipt of each Submittal. Allow increased time for large or complex Submittals.
   4) For Submittals for materials or equipment, date by which material or equipment must be at the Site to avoid delaying the Work and to avoid delaying the work of others (if any).

c. Prepare Schedule of Submittals using same software, and in same format, specified for Progress Schedules.

d. Coordinate Schedule of Submittals with the Progress Schedule.

e. Schedule of Submittals that is not compatible with the Progress Schedule, or that does not indicate Submittals on the Project’s critical path, or that places extraordinary demands on Engineer for time and resources, is unacceptable. Do not include Submittals not required by the Contract Documents.

f. In preparing Schedule of Submittals:
   1) Considering the nature and complexity of each Submittal, allow sufficient time for reviews and revisions.
   2) Allow reasonable time for: Engineer’s review and processing of Submittals, for Submittals to be revised and resubmitted, and for returning Submittals to Contractor.
   3) Identify and accordingly schedule Submittals that are expected to have long anticipated review times.

1.6 PREPARATION OF SUBMITTALS

A. Prior to Submittal Preparation:
   1. The General Conditions, as may be modified by the Supplementary Conditions, address Contractor’s responsibility for submitting for Owner’s acceptance identification of Subcontractors and Suppliers. Obtain Owner’s acceptance before entering into subcontracts and purchase orders for the Work.
   2. Comply with the Contract Documents relative to terms and conditions of subcontracts and purchase orders for the Work.
   3. Contractor’s responsibilities for the following are set forth in the General Conditions, as may be modified by the Supplementary Conditions, and as may be augmented elsewhere in the Contract Documents:
      a. Obtaining field measurements and dimensions.
      b. Determining and verifying required quantities.
      c. Verifying compatibility of materials.
      d. Apportioning the Work among Subcontractors, Suppliers, and Contractor.
      e. Reconciling required materials, equipment, and other Contract requirements with Contractor’s means, methods, techniques, sequences, and procedures of construction and with Contractor’s safety and protection programs and precautions incident thereto.
      f. Reviewing applicable provisions of the Contract Documents and obtaining from Engineer necessary interpretations or clarifications.

B. Submittal Identification:
1. Submittal Number: Shall be a unique number assigned to each individual Submittal. Assign Submittal numbers as follows:
   a. First part of Submittal number shall be the applicable Specifications section number, followed by a hyphen.
   b. Second part of Submittal number shall be a three-digit number (sequentially numbered from 001 through 999) assigned to each separate Submittal furnished under the associated Specifications section.
   c. Example: Submittal number for the third Submittal furnished for Section 10 14 00 - Signage, would be “10 14 00-003”.

2. Review Cycle Number: Each resubmittal of a given Submittal shall be indicated with a lower-case letter designation:
   a. No letter designation for initial (first) submittal of the Submittal number.
   b. “a” shall indicate first resubmittal of the Submittal number.
   c. “b” shall indicate second resubmittal of the Submittal number.

3. Examples:

<table>
<thead>
<tr>
<th>Example Description</th>
<th>Submittal Identification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial (first) review cycle of the third Submittal furnished under Section 10 14 00 - Signage</td>
<td>10 14 00-003-</td>
</tr>
<tr>
<td>Second review cycle (first resubmittal) of third Submittal furnished under Section 10 14 00 - Signage</td>
<td>10 14 00-003- a</td>
</tr>
</tbody>
</table>

C. Marking of Submittals:
1. Mark on each page of each Submittal and each individual component submitted with Submittal number and applicable Specifications paragraph.
2. Mark each page of each Submittal with the Submittal page number.
3. Each Shop Drawing sheet shall have title block with complete identifying information satisfactory to Engineer.
4. For product data Submittals, operation and maintenance data Submittals, and other Submittals:
   a. Mark options to be furnished using broad, dark arrows or “clouds” clearly drawn around the relevant text or diagrams. Do not use highlighter for indicating options and features.
   b. Indicate options and features not furnished using clear strikeouts through the text or diagrams.

D. Submittal Organization and Content – General:
1. Page or Sheet Size; Furnish Submittals with one or more of the following page or sheet sizes: (a) 8.5 IN by 11 IN; (b) 11 IN by 17 IN; (c) 22 IN by 34 IN; unless another sheet size is acceptable to Engineer.
2. Language: All parts of each Submittal shall be in the English language.
3. Units of Measurement: Clearly indicate units of measurement on Shop Drawings, product data Submittals, record documentation, and operation and maintenance data Submittals.
4. Organize each Submittal logically to facilitate ease of understanding and review.
5. To the extent practicable, arrange Submittal information in same order as requirements are written in the associated Specifications section.
6. Each Submittal shall cover Work under only one Specifications section.
7. To the extent practicable, package together Submittals for the same Specifications section. Do not furnish required information piecemeal.
8. For large or complex Submittals, include a title page and table of contents.
9. Include appropriately labeled fly sheets to separate distinct parts of each Submittal.
10. Ensure legibility of all pages in each Submittal.
11. Minimize extraneous and unnecessary information in Submittals for materials and equipment. Do not submit information not relevant to the Submittal and associated requirements of the Contract Documents.

12. Contractor’s, Subcontractor’s, and Supplier’s written comments on Shop Drawings and product data diagrams shall be colored green.

13. Do not submit under Specifications sections with title that include “Basic Requirements”, unless the subject material or equipment is specified, in total, in a Specifications section with the words, “Basic Requirements” in its title.

E. Electronic Documents Submittals:

1. Format: Electronic Documents Submittals shall be “portable document format” (.PDF) files unless expressly required otherwise by applicable provisions of the Contract Documents.

2. Electronic Documents Submittals must be electronically searchable when delivered to Engineer and other recipients.

3. Organization and Content:
   a. Each Electronic Documents Submittal shall be one file; do not divide individual Submittals into multiple Electronic Documents files each unless file size will exceed 20 MB.
   b. When Submittal is large or contains multiple parts, furnish PDF file with suitably titled electronic bookmark for each section of the Submittal.
   c. Content shall be identical to paper or other original Submittal. First page of each Electronic Documents Submittal shall be transmittal letter required in this’s Paragraph 1.7.A.

4. Quality and Legibility: Electronic Documents Submittal files shall be made from the original and shall be clear and legible. Markings applied by Contractor, Subcontractor, or Supplier shall be clear, distinct, and readily apparent. Electronic Documents file shall be full size of original documents. Properly orient all pages for convenient reading on a computer display; do not furnish pages sideways or upside-down.

5. Provide sufficient internet service, software, and systems for Contractor with capability appropriate for transmitting the necessary files and receiving responses from Engineer or other entities.

6. Check not less than once per day for distribution of Electronic Documents Submittals and responses and related Electronic Documents correspondence.

F. Proposed “Or-Equals”, Substitutes, and Deviations from Contract Requirements:

1. “Or-Equals”:
   a. The meaning of “or-equal” is addressed in Section 01 25 00 - Substitution Procedures.
   b. Contractor’s request for approval of “or-equals” is to be presented via the associated Action Submittal(s) and shall include the information required in provisions governing “or-equals”.
   c. Expressly and prominently indicate, “Proposed Or-Equal” on the associated Action Submittals when Submittal is for an “or-equal”.
   d. Submittals requesting approval of an “or-equal” but not accompanied by the required, supplemental information will be deemed incomplete by Engineer and returned to Contractor without approval.

2. Substitutes:
   a. The meaning of “substitute” is indicated in Section 01 25 00 - Substitution Procedures.
   b. Requests for approval of substitutes shall comply with Section 01 25 00 - Substitution Procedures, and other relevant provisions of the Contract Documents.
   c. Contractor’s request for approval of substitute is separate from the associated Action Submittal(s). Action Submittals that request approval of a substitute when a separate, formal substitution request (furnished in accordance with the Contract Documents) was not previously furnished to Engineer, followed by formal approval in via an appropriate contract modification (typically either a Field Order or Change Order), will be deemed by Engineer as non-compliant with the Contract Documents and will be returned to Contractor without approval.
d. Contractor is solely responsible for delays incurred due to substitutes proposed via Submittals that have not been previously duly approved via an appropriate Contract modification.

e. Action Submittals for items or procedures approved via an appropriate Contract modification shall include a copy of the Contract modification in which the substitute was approved.

3. Submittals with Proposed Deviations from Contract Requirements:
   a. When Submittal proposes deviations from requirements of the Contract Documents, the Submittal shall clearly and expressly indicate each proposed deviation.
   b. Also comply with this Section’s provision, in the Article below, on Contractor’s transmittal letter expressly alerting Engineer to the proposed deviations.
   c. Comply with requirements of the Contract regarding substitutes and “or-equals”.
   d. When deviation is proposed, also appropriately revise text of Contractor’s approval, from that required below in this Article.
   e. When Submittal includes deviations from Contract requirements and either the Submittal itself, Contractor’s transmittal letter, or both, do not comply fully with Contract requirements for indicating deviations in Submittals and giving separate written notice thereof, Engineer’s approval of such deviations will be deemed null and void unless Engineer’s written response to the Submittal has expressly acknowledged such deviation and indicated Engineer’s approval thereof.
   f. Contractor is solely responsible for delays and costs incurred due to any and all Submittals with deviations from Contract requirements that were not properly, expressly indicated and approved in accordance with the Contract Documents. Deviations not duly approved in accordance with the Contract Documents may be deemed defective Work. Contractor is solely responsible for remedying defective Work and all associated cost and time impacts.

G. Contractor’s Approval of Submittals:
1. Contractor’s Review: Before transmitting Submittals to Engineer, review each Submittal to:
   a. Ensure proper coordination of the Work.
   b. Determine that each Submittal is in accordance with Contractor’s desires.
   c. Verify that Submittal contains sufficient information for Engineer to determine compliance with the Contract Documents.
2. Incomplete or inadequate Submittals will be returned without detailed review by Engineer.
3. Contractor’s Approval Stamp and Signature:
   a. Each Submittal furnished shall bear Contractor’s approval stamp (or facsimile thereof) and signature, as evidence that the Submittal has been reviewed and approved by Contractor and verified as complete and in accordance with the Contract Documents.
   b. Submittals without Contractor’s approval and signature (as required by the contract Documents) will be returned to Contractor without further review by Engineer and deemed incomplete.
   c. Engineer reserves the right to reject as incomplete Submittals where Contractor’s approval signature appears computer-generated or reproduced without the active involvement or review of Contractor’s signatory.
   d. Contractor’s approval shall contain the following text:

```
Project Name: Woodside WRF – UV Installation
Contractor’s Name: ______________________________
Contract Designation: ____________________________
Date: __________________________________________
--- Reference ----------------
Submittal Title: _________________________________
Specifications: _________________________________
Section: _______________________________________
```
Page No.: __________________________
Paragraph No.: __________________________
Drawing No.: __________________________ of __________________________
Location of Work: 4297 Glenbrook Drive, Hailey, Idaho 83313

Submittal No. and Review Cycle: __________________________
Coordinated by Contractor with Submittal Nos.: __________________________

I hereby certify that Contractor has satisfied Contractor’s obligations under the Contract Documents relative to Contractor’s review and approval of this Submittal, including: (1) reviewed and coordinated the Submittal with other Submittals and with the requirements of the Work and the Contract Documents; (2) determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect to the Submittal, (b) the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work, and (c) all information relative to Contractor’s responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto; (3) confirmed the Submittal is complete with respect to all related data included in the Submittal; and (4) clearly and expressly indicated all proposed deviations (if any) from the requirements of the Contract Documents both in the Submittal itself and in the Submittal’s transmittal letter. Accordingly, this Submittal is hereby approved for Contractor by:

Approved for Contractor by: __________________________

H. Resubmittals:
1. Refer to the General Conditions, as may be modified by the Supplementary Conditions, for requirements regarding resubmitting required Submittals.
2. In addition to limits on the quantity of resubmittals, as indicated in the General Conditions, Contractor shall furnish Submittals with such completeness, accuracy, and compliance with the Contract Documents to obtain Engineer’s approval or acceptance, as applicable, without the total quantity of Submittals furnished, including all initial Submittals and all resubmittals, exceeding 150% of the number of Submittals indicated on the Schedule of Submittals initially accepted by Engineer, plus a corresponding percentage of the quantity of Submittals required by Change Orders, Work Change Directives, and Field Orders.
3. Do not increase the scope of prior review cycle of the same Submittal.
4. Indicate on Contractor’s transmittal letter how Submittal was revised from previous review cycle of the Submittal and where the revisions or corrections are located within the resubmittal.
5. Expressly address and provide response for all components previously transmitted by Engineer on prior review cycles of the subject Submittal. Where resubmittal lacks complete response to Engineer’s prior comments, Engineer may deem such resubmittal as incomplete and return it to Contractor without further review.
6. Where part of the Submittal’s prior review cycle was expressly approved or accepted, as applicable, by Engineer, do not include such items in subsequent resubmittals.
7. Indicate, “Not Yet Resolved—To Be Resubmitted at a Later Date” for any items not approved in prior review cycle of the Submittal for items not included in the subject resubmittal. Engineer reserves the right to deem incomplete Submittals “Not Approved” or “Revise and Resubmit”. Furnishing incomplete or partial resubmittals is discouraged.
8. Resubmittal of Previously Approved or Accepted Items:
   a. Do not resubmit on a given item previously approved or accepted, as applicable, by Engineer, without Engineer’s advance consent. Consent will be given for bona-fide unavailability of a previously approved or accepted item where Contractor has acted in good faith in a timely manner with due diligence to comply with the Contract Times.
b. Destroy or conspicuously mark “SUPERSEDED” on all documents having previously received Engineer’s approval or acceptance, as applicable, that are superseded by a resubmittal.

1.7 TRANSMITTAL OF SUBMITTALS BY CONTRACTOR

A. Contractor’s Transmittal Letters for Submittals:
   1. Furnish separate transmittal letter with each Submittal. Use transmittal form attached to this Section (as Exhibit 01 33 00-A) unless other transmittal form is acceptable to Engineer at the start of the Project’s construction.
   2. When transmittal form other than this Section’s Exhibit 01 33 00-A is acceptable to Engineer, at beginning of each transmittal, include a reference heading indicating: Contractor’s name, Owner’s name, Project designation, Contract designation, transmittal number, and Submittal number (with review cycle).
   3. “Or-Equals”: When the Submittal is proposing an “or-equal”, expressly so indicate on transmittal form submitted by Contractor.
   4. Proposed Deviations from Contract Requirements: When the Submittal proposes deviations from requirements of the Contract Documents, transmittal letter shall specifically describe each proposed deviation:

B. Submittal Delivery Method:
   1. This provision presents general requirements for delivery or all Submittals unless otherwise required elsewhere in the Contract Documents.
   2. Furnish Submittals as Electronic Documents delivered in accordance with this Section.
   3. Furnish Submittals to Engineer and each other entity indicated in the Contract Documents as receiving a Submittal directly from Contractor.
   4. Address Submittals to Engineer as follows: HDR, 412 East Parkcenter Boulevard, Suite 100, Boise, Idaho 83706, to attention of Brad Bjerke, brad.bjerke@hdrinc.com.
   5. Preliminary Copy for Field Office: Simultaneously with delivering Electronic Documents Submittal to Engineer, also deliver:
      a. Electronic Documents Submittal to Resident Project Representative.
      b. One paper copy of complete Submittal delivered to Owner’s field office at the Site.

C. Samples - Transmittal and Delivery:
   1. Labeling and Tagging Samples:
      a. Securely label or tag each Sample with Submittal identification number.
      b. Label or tag shall include clear space at least 4 IN by 4 IN in size for affixing Engineer’s review stamp indicating disposition assigned by Engineer.
      c. Label or tag shall not cover, conceal, or alter Sample’s appearance or features.
      d. Label or tag shall not be separated from the Sample.
   2. Timing: Deliver required Samples concurrently with other Action Submittals required for the same element of the Work, unless other delivery time frame is indicated in the Schedule of Submittals accepted by Engineer.
   3. Quantity Required:
      a. Where the Contract Documents require a Sample as a field mock-up, provide Sample at the Site or in the Work at location acceptable to Engineer. Provide the quantity of field mock-ups required by the contract Documents; if not otherwise shown or specified, provide one of each required field mock-up.
      b. For reasonably portable Samples, deliver the quantity of Samples required in the associated Specifications. If quantity of Samples is not indicated in the associated Specifications section, deliver to Engineer not less than three identical Samples of each item for which Sample is required.
      c. Samples will not be returned to Contractor. If Contractor requires Sample(s) for Contractor’s use, so advise Engineer in writing and furnish additional copies of the Sample. Contractor is responsible for furnishing, shipping, and transporting additional Samples.
   4. Locations for Delivery of Reasonably Portable Samples for Review:
a. Deliver one physical Sample to Owner’s field office at the Site.
b. Deliver balance of required physical Samples to Engineer at address indicated in this Article for receipt of Submittals, unless otherwise directed by Engineer.

D. Closeout Submittals – Transmittal and Delivery:
1. Furnish the following Closeout Submittals in accordance with general requirements for transmitting and delivering Submittals, indicated above in this Article: maintenance contracts; warranty bonds (when required) and other bonds required for specific materials, equipment, or systems; warranty documentation; and sustainable design closeout documentation (when required). On documents such as maintenance contracts and bonds, include on each document furnished original (“wet”) signature of entity issuing said document. When original “wet” signatures are required, furnish such Submittals to Engineer both on original paper and as Electronic Documents, and to other entities furnish as indicated above in this Article for general requirements for Submittals.
2. Operations and Maintenance Manuals: Submit in accordance with this Section.
3. Record Documents: Submit in accordance with this Section.
4. Software: In addition to software installed on Owner’s computer system, furnish number of copies of software required in the Specifications section where the software is specified. Preferred means of transmittal is via secure file transfer directly to Owner (or facility manager, if other than Owner) via secure file transfer method mutually acceptable to software developer and the receiving entity. When secure file transfer is used, submit to Engineer documentation signed or electronically acknowledged by Owner that the files were received. Where such software is available only on the software developer’s portable media, furnish such software on software developer’s original, portable media, sealed in software developer’s original, unopened, clearly labeled packaging.

E. Maintenance Materials Submittals – Delivery:
1. Deliver physical maintenance materials required by the Contract Documents in accordance with applicable provisions of the Contract.
2. Submit documentation of delivery of (Maintenance Materials Submittals) in accordance with general requirements for Submittals as indicated in this Section.

1.8 ENGINEER’S REVIEW OF SUBMITTALS
A. This Article applies to review of all Submittals by Engineer or other entity to whom the Contract Documents require such Submittal be furnished.
B. Timing:
1. Timing of Engineer’s review will be in accordance with the Schedule of Submittals accepted by Engineer.
2. When Submittal is delivered to Engineer on a date other than that indicated in the Schedule of Submittals accepted by Engineer, duration of Engineer’s review may differ from that indicated in the Schedule of Submittals, based on Engineer’s availability and resources. Engineer will make good-faith effort to furnish responses to Submittals in a timely manner.
3. Contractor is responsible for communicating to Engineer when a Submittal is on the Project’s critical path.
C. Engineer’s Review:
1. Markings:
   a. Comments or responses marked directly on Submittal by Engineer (or other entity reviewing Submittal) will be colored red.
   b. Engineer may also present narrative comments on a comment sheet inserted by Engineer into the Submittal or included on Engineer’s transmittal letter for the Submittal. Such comments will be in black text. When a separate comment sheet is included by Engineer, such sheet will be clearly identified as Engineer’s comments.
2. Engineer’s review and disposition assigned to Submittal are subject to the following:
a. Submittal disposition is subject to: Engineer’s comments on the Submittal; disclaimer language on Engineer’s Submittal transmittal letter; Engineer’s Submittal review stamp (when used) or equivalent (when used); and this provision.
b. Engineer’s review is only for general compatibility with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents, and for general compliance with the information given in the Contract Documents.
c. Contractor shall be solely responsible for complying with the Contract Documents, as well as with Supplier instructions consistent with the Contract Documents, Owner’s directions, and Laws and Regulations. Contractor is solely responsible for obtaining, correlating, confirming, and correcting dimensions at the Site; quantities; information and choices pertaining to fabrication processes; means, methods, sequences, procedures, and techniques of construction; safety precautions and programs incident thereto; and for coordinating the work of all trades.
d. Engineer is not responsible for resubmittals not yet furnished by Contractor or tracking Contractor’s progress on resubmittals.

3. Documents not required by the Contract Documents but nonetheless furnished by Contractor as submittals will not be reviewed by Engineer.

D. Meaning of Submittal disposition Assigned by Engineer:

1. Action Submittals:
   a. “Approved” (Action Code A): Upon return of Submittal marked “Approved”, order, ship, or fabricate materials and equipment included in the Submittal (pending Engineer’s approval or acceptance, as applicable, of production-related qualifications statements and certifications, and required source quality control Submittals) or otherwise proceed with the Work in accordance with the Submittal and the Contract Documents.
   b. “Approved as Noted” (Action Code B): Upon return of Submittal marked “Approved as Noted”, order, ship, or fabricate materials and equipment included in the Submittal (pending Engineer’s approval or acceptance, as applicable, of production-related qualifications statements and certifications, and required source quality control Submittals) or otherwise proceed with the Work in accordance with the Submittal and the Contract Documents, and in accordance with Engineer’s comments and notes indicated in Engineer’s Submittal response.
   c. “Revise and Resubmit” (Action Code C): Upon return of Submittal marked “Revise and Resubmit”, make the revisions necessary and indicated and resubmit to Engineer for approval.
   d. “Not Approved” (Action Code D): This disposition indicates material or equipment that cannot be approved. “Not Approved” disposition may also be applied to Submittals that are incomplete. Upon return of Submittal marked “Not Approved”, repeat initial submittal procedure utilizing approvable material or equipment, with a complete Submittal clearly indicating all information required.

2. Informational, Closeout, and Maintenance Materials Submittals:
   a. “Accepted” (Action Code F): Information included in Submittal complies with the applicable requirements of the Contract Documents and is acceptable. No further action by Contractor is required relative to such Submittal, and the Work covered by the Submittal may proceed. Materials and equipment with Submittals with this disposition may be shipped or operated, as applicable. Submittals assigned “Accepted” by Engineer (or other reviewing entity) does not indicate Engineer’s acceptance of the associated Work, which is indicated only as set forth in the General Conditions and Section 01 77 19 – Closeout Requirements.
   b. “Not Acceptable” (Action Code G): Submittal, or part thereof, does not indicate full compliance with applicable requirements of the Contract Documents and is not acceptable. Provide labor, materials, equipment, services, and incidentals necessary to properly and accurately revise Submittal and resubmit to indicate acceptability and compliance with the Contract Documents.

3. Other:
a. “Submittal Not Reviewed” (Action Code E): Documents so marked by Engineer are not required by the Contract Documents. Submittals may also be marked with this disposition when information in the document was previously reviewed and approved or accepted by Engineer, as applicable.

E. Distribution of Engineer’s Responses:
1. Unless otherwise indicated in the Contract Documents, Engineer will distribute written responses (as Electronic Documents) to Submittals to the following:
   a. Contractor.
   b. Owner.
   c. Engineer’s file.
2. Engineer’s acceptance of Informational Submittals, Closeout Submittals, and Maintenance Materials Submittals will be recorded in Engineer’s Submittal log. Copy of Engineer’s Submittals log is available from Engineer upon written request of Owner or Contractor. If no such request is received by Engineer, Engineer will distribute copy of Engineer’s Submittals log once per month (when Submittals have been received or acted on by Engineer). Engineer may distribute copy of Engineer’s Submittals log as an Electronic Document or as handout at construction progress meetings.
3. Paper copies of Engineer’s Submittal responses will not be distributed unless otherwise required by the Contract Documents or otherwise agreed to by Engineer.
4. Contractor is responsible for forwarding Engineer’s Submittals responses to Subcontractors and Suppliers as appropriate, and for coordinating the Work of all trades.

PART 2 - PRODUCTS - (NOT USED)

PART 3 - EXECUTION

3.1 ATTACHMENTS

A. The documents listed below, following this Section’s “End of Section” designation, are part of this Specifications Section:
1. “Exhibit 01 33 00-A – Transmittal for Submittal No. ___” (one page).

END OF SECTION
### Transmittal for Submittal

**No. __________ - ______**

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Submittal No.</th>
<th>Description (indicate number of copies where paper copies of physical Samples are returned)</th>
<th>Manufacturer</th>
<th>Supplier Dwg or Data No.</th>
<th>Engineer’s Disposition (Action Code) *</th>
</tr>
</thead>
<tbody>
<tr>
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</table>

**Contractor’s Remarks (insert text):**

**Engineer’s Remarks (insert text):**

**Legend for Action Code** indicated above, assigned by Engineer:

- **E** – Submittal Not Reviewed
- **F** – Accepted (this code normally recorded in Engineer’s Submittals log).
- **G** – Not Acceptable

**Engineer’s Disclaimer** (for Submittals that do not involve delegated design):

- **a.** Submittal action code is subject to: Engineer’s comments on the Submittal, comment sheets (if any), and this transmittal letter; disclaimer language on Engineer’s Submittal review stamp or equivalent; and Specifications Section 01 33 00 – Submittal Procedures.

- **b.** Engineer’s review is only for general compatibility with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents, and for general compliance with the information given in the Contract Documents.

- **c.** Contractor shall be solely responsible for complying with the Contract Documents, as well as with Supplier instructions consistent with the Contract Documents, Owner’s directions, and Laws and Regulations. Contractor is solely responsible for obtaining, correlating, confirming, and correcting dimensions at the Site; quantities; information and choices pertaining to fabrication processes; means, methods, sequences, procedures, and techniques of construction; safety precautions and programs incident thereto; and for coordinating the work of all trades.

**Reviewed for HDR by:**

**Date of Engineer’s Review:**

---

**Distribution:**

- **Contractor**
- **File**
- **Field**
- **Owner**
- **Other**

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SECTION 01 35 43.13
ENVIRONMENTAL PROCEDURES FOR HAZARDOUS MATERIALS

PART 1 - GENERAL

1.1 SUMMARY
A. Section Includes:
1. General responsibilities and enforcement concerning Constituents of Concern at the Site.
2. Notifying Owner of Constituents of Concern at the Site.
3. Hazard communication plan.
5. Storage of materials containing Constituents of Concern and storage of non-hazardous materials.
6. Area for storing materials containing Constituent(s) of Concern.
7. Verification of compliance.
B. Scope:
1. Contractor’s responsibilities for remediating a known Hazardous Environmental Condition, if any, at the Site are set forth in the Specifications of Division 02 – Existing Conditions.
2. Contractor shall provide all labor, materials, equipment, tools, services, and incidentals necessary and required to comply with requirements of this Section and related provisions of the General Conditions, as may be modified by the Supplementary Conditions.
3. In this Section’s title, “hazardous materials” means “Constituents of Concern” as defined in the General Conditions.
C. Related Requirements:
1. Include, but are not necessarily limited to:
   a. Section 00 73 01 - Supplementary Conditions (EJCDC C-900—2018).
   b. Section 02 41 00 - Demolition.

1.2 BASIC RESPONSIBILITIES AND ENFORCEMENT REGARDING CONSTITUENTS OF CONCERN AT THE SITE
A. Scope – Basic Responsibilities:
1. Contractor shall develop, implement, and maintain throughout the Project a hazardous materials management program (HMMP) in accordance with Laws and Regulations and the Contract Documents.
2. Constituents of Concern Brought to Site by Contractor:
   a. Transport, handle, store, label, use, and dispose of materials containing Constituents of Concern in accordance with this Section, other applicable provisions of the Contract Documents, and Laws and Regulations.
3. Constituents of Concern Generated by Contractor:
   a. Materials containing Constituents of Concern shall be properly handled, stored, labeled, transported and disposed of by Contractor in accordance with Laws and Regulations, and this Section.
   b. If Contractor will generate or has generated materials containing Constituents of Concern at the Site or adjacent areas, obtain a USEPA identification number listing Contractor’s name and address of the Site as generator of the Constituents of Concern. Obtain identification number from state environmental agency or other authority having jurisdiction at the Site. Submit identification number within time limit indicated in this Section’s “Submittals” Article.
   c. Contractor is responsible for identifying, analyzing, characterizing, labeling, storing, transporting, and disposing of Constituents of Concern generated by Contractor.
4. Cost Responsibility:
a. Fines and civil penalties imposed on Owner or facility manager (if other than Owner) for Contractor’s violations, whether at the Site or other locations, and other costs incurred by Owner and facility manager associated with cleanup of a Hazardous Environmental Condition created or exacerbated by Contractor shall be paid by Contractor.
b. If Contractor has exacerbated a Hazardous Environmental Condition existing at the Site prior to the start of the Work, Contractor shall pay Contractor’s appropriate share of costs associated with fines, civil penalties, and cleanup costs in proportion equal to the extent of costs for which Contractor caused or exacerbated the Hazardous Environmental Condition and fines and civil penalties associated therewith.
c. If Contractor fails or refuses to pay such costs, Owner may pay the costs and deduct from payments due Contractor a reasonable set-off.

B. Owner’s Environmental Representative:
1. Owner’s environmental representative is:

C. Enforcement of Laws and Regulations Regarding Constituents of Concern and Hazardous Environmental Conditions:
1. To extent practicable, avoid creating or exacerbating situations causing or contributing to injury to persons, spills and emissions of Constituents of Concern, contamination of the Site and other areas, and damage (to property and the environment) caused by Hazardous Environmental Conditions.
2. When Owner or facility manager (if other than Owner) is aware of or suspects violations may have occurred or may occur, Owner or facility manager will notify Contractor, and authorities having jurisdiction, when Owner or facility manager reasonably believes doing so is necessary or appropriate. However, no such right of Owner, facility manager, or any entity for whom Owner or facility manager is responsible, including Engineer (or its consultants and subcontractors), is for benefit of Contractor. Owner, facility manager, and any entity for whom Owner or facility manager is responsible, including Engineer, are not obligated to monitor presence of, use of, storage or handling of, Constituents of Concern at the Site or other areas, or present of a potential Hazardous Environmental Condition (except those known to Owner prior to the start of construction of the Project), or to act on behalf of Contractor or anyone for whom Contractor is responsible.
3. Responsibilities regarding Laws and Regulations shall be in accordance with the General Conditions, as may be modified by the Supplementary Conditions.

1.3 SUBMITTALS

A. Informational Submittals: Submit the following to the entity(ies) indicated for each:
1. Indication of Constituents of Concern (including Chemicals) Proposed for Use at the Site:
   a. Submit to Owner’s environmental representative; do not submit to Engineer. Engineer will not accept, review, or retain such information or Submittals in Engineer’s files.
   b. Submit the information required in sufficient time for Owner’s review and acceptance not later than three days before bringing associated Constituent of Concern to the Site.
   c. Submittal Content:
      1) Current (dated within the past two years) safety data sheets (SDS, formerly “material safety data sheets”) in accordance with 29 CFR 1910.1200 (OSHA Hazard Communication Standard).
      2) Manufacturer of material or equipment containing such substance.
      3) Supplier (if other than manufacturer).
      4) Container sizes and number of containers proposed to be at the Site.
      5) Minimum and maximum volume of material intended to be stored at the Site.
      6) Description of process or procedures in which Constituent(s) of Concern will be used at the Site.

2. Material Containing Constituents of Concern Generated at the Site:
   a. Submit to Owner’s environmental representative; do not submit to Engineer. Engineer will not accept, review, or retain such information or Submittals in Engineer’s files.
b. Submit the information required prior to generating each associated Constituent of Concern at the Site or adjacent areas. Submit within not less than 48 hours after Contractor’s receipt of associated analytical results.

c. Submittal Content:
   1) For each Constituent of Concern generated at the Site or adjacent areas:
      a) USEPA identification number.
      b) Laboratory analysis results.
      c) Quantity, size, and location of storage containers at the Site or adjacent areas.

3. Permits:
   a. Submit to Owner’s environmental representative; do not submit to Engineer. Engineer will not accept, review, or retain such information or Submittals in Engineer’s files.
   b. Submit within 48 HRS of obtaining each associated permit.
   c. Submittal Content:
      1) Copies of each permit obtained for storing, handling, using, transporting, and disposing of materials containing Constituents of Concern, obtained from authorities having jurisdiction.

4. Other Documents Required for the HMMP:
   a. Submit to Owner’s environmental representative; do not submit to Engineer. Engineer will not accept, review, or retain such information or Submittals in Engineer’s files.
   b. Submit requested documents within 72 hours of Contractor’s receipt of such request.
   c. Submittal Content:
      1) Submit requested HMMP documents, which may include emergency/spill response plan, communication plan, and other documents.

1.4 HAZARDOUS MATERIALS MANAGEMENT

A. Obtain Owner’s environmental representative’s acceptance before bringing to the Site each material containing a Constituent of Concern.

B. Hazard Communication Plan:
   1. Develop and implement a communication plan relative to materials containing one or more Constituents of Concern.
   2. Safety Data Sheet (SDS) Notebooks:
      a. Maintain at the Site not less than two notebooks containing:
         1) Inventory of materials containing a Constituent of Concern (including all chemicals).
         2) Current (dated within the past two years) SDS for all materials being used to accomplish the Work, whether or not defined as a Constituent of Concern.
      b. Keep one notebook in Contractor’s field office at the Site; keep second notebook at location acceptable to Owner’s environmental representative.
      c. Keep notebooks up-to-date as materials are brought to and removed from the Site.

C. Emergency/Spill Response Plans:
   1. Develop, implement, and maintain an emergency/spill response plan, for each Constituent of Concern or each class or group of material containing a Constituent(s) of Concern, as applicable.
   2. Response plan shall include not less than the following:
      a. Description of materials and equipment available at the Site to contain or respond to emergencies related to or spills of the materials containing one or more Constituents of Concern.
      b. Procedures for notifying, and contact information for:
         1) Authorities having jurisdiction.
         2) Emergency responders.
         3) Owner.
         4) Engineer.
         5) The public, as applicable.
         6) Other entities as necessary or required.
c. Response coordination procedures between Contractor, Owner or facility manager (if other than Owner), and others as appropriate.
d. Site plan showing proposed locations of Constituents of Concern storage areas and location of spill containment/response materials and equipment, and location of storm water drainage inlets, catch basins, and drainage routes, including storm sewers, ditches and swales, and surface waters.
e. Description of Constituent of Concern handling and emergency/spill response training provided to Contractor’s and Subcontractors’ workers, in accordance with 29 CFR 1926.21(b) (“Employer Responsibility”) and other Laws and Regulations.

D. Storage of Materials Containing Constituents of Concern and Storage of Non-Hazardous Materials:
   1. Vessels containing materials with a Constituent of Concern shall bear applicable, clearly visible NFPA hazard diamonds.
   2. Container Labeling:
      a. Properly label each container of combustible materials, whether or not classified as containing a Constituent of Concern.
      b. Stencil Contractor’s name and, as applicable, Subcontractor’s name, on:
         1) Each vessel containing a Constituent of Concern; and
         2) For non-hazardous materials, on each container over five-gallon capacity.
      c. Each container shall have securely-attached label clearly identifying contents. Also label containers that are filled from larger containers.
      d. If Owner or facility manager (if other than Owner) becomes aware of unlabeled containers at the Site, Owner’s environmental representative will so advise Contractor, although Owner’s and facility manager’s personnel are not obligated to do so. Properly label each containers within one hour of receipt of such notice from Owner or facility manager, or remove container from the Site and adjacent areas.
      e. Properly dispose of materials containing Constituents of Concern, in accordance with Laws and Regulations, at a location other than the Site and adjacent areas.
   3. To greatest extent possible, store at offsite location materials containing a Constituent of Concern until required for use in the Work.

E. Area for Storing Materials Containing Constituent(s) of Concern:
   1. Maintain designated storage area for materials containing one or more Constituents of Concern. Storage area shall include secondary containment to prevent release of spilled or leaking substances. Storage area shall include barriers to prevent vehicles from colliding with storage containers, and shall include protection from environmental effects such as elements, temperature, sunlight, and other environmental effects.
   2. Provide signage in accordance with Laws and Regulations, clearly identifying the storage area.

F. Verification of Compliance:
   1. Not less than monthly, Contractor’s safety representative shall meet with Owner’s environmental representative at the Site to:
      a. Review Contractor’s HMMP documents.
      b. Review HMMP procedures.
      c. Inspect storage areas and the Site in general, to verify compliance with this Section.

**PART 2 - PRODUCTS - (NOT USED)**

**PART 3 - EXECUTION - (NOT USED)**

**END OF SECTION**
SECTION 01 64 00
OWNER-FURNISHED PRODUCTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Requirements and procedures for Owner-furnished materials and equipment to be installed by Contractor, including:
      a. Items in Owner’s existing stock to be installed or relocated by Contractor.
      b. Items purchased by Owner under one or more separate procurement contracts.
      c. Assignment of procurement contracts to Contractor.
      d. Handling and storage of Owner-furnished items.

B. Scope:
   1. Contractor shall provide labor, materials, tools, equipment, services, and incidentals shown, specified, and necessary for accepting, handling, insuring, storing, and maintaining as required, installing, checking out, starting-up, and completing Owner-furnished materials and equipment in accordance with the Contract Documents.

1.2 OWNER FURNISHED MATERIALS AND EQUIPMENT

A. Items of equipment and materials to be furnished by Owner for installation by Contractor are indicated below.
   1. Furnished under one or more procurement contracts separately entered into by Owner (as “buyer”) with a seller:
      a. Installed by Contractor: Wedeco TAK55 H 6-3 UV disinfection system.
         1) Items will be delivered FOB to the Site.
   2. Materials and equipment currently in Owner’s stock or possession to be installed or relocated by Contractor:
      a. Relocated by Contractor: Existing UV disinfection system, currently located in the east channel. Contractor shall remove the existing UV disinfection system and relocate equipment. Removal at the location shown on the Drawings; relocation point to be determined by Owner.

B. Availability of Owner-Furnished Materials and Equipment:
   1. Owner-furnished materials and equipment will be available to Contractor starting on:
      a. Items Obtained via Procurement Contracts: On the date(s) or time(s) indicated for delivery as set forth in the associated procurement contract.

C. Availability of Procurement Contract Documents:
   1. When Procurement Contract is Assigned: A copy of the procurement contract documents is part of the construction Contract Documents, as an exhibit to the Agreement, as indicated in the enumeration of the Contract Documents in the Agreement.

D. For Owner-furnished materials and equipment obtained via one or more procurement contracts that are not assigned to Contractor, Engineer will keep Contractor informed of probable delivery dates of the materials and equipment included in the procurement contract.

E. Owner’s Responsibilities:
   1. Within 10 days after the Effective Date of the Contract, Owner will arrange for and deliver to Contractor an electronic copy (in portable document format; PDF) of each of seller’s shop drawings, samples (except for physical samples, of which one each will be delivered to Contractor), and other submittals as reviewed by Engineer or Owner. Such submittals, whether approved or otherwise, are not part of the Contract Documents.
   2. When Procurement Contract is Not Assigned to Contractor: Owner (or Engineer, on behalf of Owner) will advise Contractor of the anticipated delivery date 10 days prior to scheduled
delivery. Upon telephone advisory from seller’s shipping entity/carrier, Owner (or Engineer, on behalf of Owner) will give Contractor approximately 24 hours’ advance notification, by telephone, of scheduled delivery.

3. Owner shall arrange and pay for delivery to the Site of Owner-furnished materials and equipment obtained via procurement contracts.

4. When procurement contract is not assigned to Contractor, upon delivery, Owner (who may be accompanied by Engineer, at Owner’s option) shall inspect, jointly with Contractor, the materials and equipment delivered by seller. Where appropriate, Owner will arrange with seller to have seller’s representative present at the delivery point to assist in visually inspecting the delivered materials and equipment.

5. When procurement contract is not assigned to Contractor, the Owner will submit to seller claims for damage incurred in transit to the delivery location and shall replace damaged, defective, or nonconforming items of Owner-furnished materials and equipment obtained via procurement contract.

6. When procurement contract is not assigned to Contractor, the Owner shall pay for services of seller’s factory-trained representative to furnish consultation and advice during installation of associated Owner-furnished materials and equipment, to inspect, check, and approve installation before operation, and to furnish technical advice and direction during start-up and field quality control activities for Owner-furnished materials and equipment. Extent to which services of seller’s representative will be provided during installation will be in accordance with the procurement contract documents.

7. If services of seller’s representative beyond the scope of such services set forth in the procurement contract document is desired by Contractor, or if such services are necessary as a result of defective Work by Contractor, Contractor shall arrange and pay for such services of seller’s representative.

8. After Substantial Completion, Owner (or facility manager, if other than Owner) will operate and maintain the items obtained via procurement contract and coordinate directly with seller regarding matters of routine maintenance. When associated procurement contract is not assigned to Contractor, the Owner (or facility manager, if other than Owner) will communicate directly with seller regarding warranty-related matters. When procurement contract is assigned to Contractor, the Owner (or facility manager, if other than Owner) will communicate warranty-related issues to Contractor.

F. Contractor’s Responsibilities:

1. When procurement contract is assigned to Contractor, the Contractor has all of Contractor’s responsibilities under the Contract Documents plus all of buyer’s responsibilities under the procurement contract documents, from the time the assignment is effective. Under the assigned procurement contract, Contractor is responsible to Owner to same extent that seller is responsible to buyer under the terms and conditions of the associated procurement contract.

2. When procurement contract is not assigned to Contractor, the Contractor’s responsibilities for Owner-furnished materials and equipment delivered by seller begin upon Contractor’s commencing to unload and handle Owner-furnished materials and equipment at the delivery location.

3. Receive and unload at the Site the Owner-furnished materials and equipment. Provide all labor, materials, equipment, tools, services, and incidentals for unloading. Perform unloading promptly upon each delivery vehicle’s arrival at the Site. Pay all charges for demurrage due to negligence or delay by Contractor.

4. Promptly upon Contractor taking custody, visually inspect Owner-furnished materials and equipment for completeness and damage.
   a. When procurement contract is not assigned to Contractor and when Owner-furnished items are already in Owner’s possession (as existing stock or inventory), visual inspection will be jointly with Owner (and others, if any, invited by Owner).
   b. Regardless of whether procurement contract is assigned to Contractor or whether Owner-furnished items are from Owner’s existing stock or inventory, promptly after
visual inspection (but in no event later than two days), prepare and furnish to Owner (with copy to Engineer) list of missing, damaged, or nonconforming goods.

c. When procurement contract is assigned to Contractor, reject damaged, defective, or nonconforming items and obtain conforming items from the seller. Owner reserves the right to accept Owner-furnished items rejected by Contractor and to authorize their use in the Work.

5. Indicate to Owner (with copy to Engineer) signed acceptance of delivery on copy of shipping documents furnished by seller’s carrier. When procurement contract is assigned to Contractor, also give seller notice required by the procurement contract, following visual inspection upon delivery.

6. Builder’s Risk Insurance Coverage:
   a. Where builder’s risk insurance for the Work is furnished by Contractor and the procurement contract is not assigned to Contractor, increase the amount of builder’s risk insurance to be not less than the Contract Price plus the replacement value of Owner-furnished materials and equipment as indicated in the builder’s risk insurance requirements in the Supplementary Conditions.
   b. Where builder’s risk insurance for the Work is furnished by Contractor and the procurement contract is assigned to Contractor, amount of builder’s risk insurance coverage shall be not less than the entire Contract Price (including both construction plus the amount of the assigned procurement contracts), in accordance with the builder’s risk insurance provisions of the General Conditions and Supplementary Conditions.
   c. Furnish to Owner copies of evidence of such revised builder’s risk insurance coverage.

7. Handle, store, protect, and maintain Owner-furnished materials and equipment, as indicated elsewhere in this Section.

8. Remedy of Damage Incurred While in Contractor’s Custody:
   a. For materials and equipment obtained via procurement contract, repair or replace Owner-furnished materials and equipment that are missing, lost, or damaged after receipt by Contractor. Replacements shall be in accordance with the associated Owner-prepared procurement contract documents.
   b. For existing items already in Owner’s inventory or possession at the start of the Work, remedy loss or damage to such items incurred during Contractor’s custody. Rehabilitation or refurbishment of such items, when required by the Contract Documents, will be in accordance with the Contract Documents and paid under the Contract.
   c. Contractor is not entitled to compensation for, or increase in Contract Price or Contract Times, for remedying damage or loss to Owner-furnished items incurred while in Contractor’s custody.

9. Coordination with Submittals and Manufacturer Instructions:
   a. For Owner-furnished materials and equipment obtained via procurement contract, coordinate with seller’s shop drawings, samples, and other submittals including seller’s written handling and installation instructions, reviewed and approved (or accepted) by Owner or Engineer, as applicable.
   b. For existing items in Owner’s inventory or possession at the start of the Work that are to be handled or installed by Contractor, coordinate with Owner-furnished copies of shop drawings and other submittals (if available), operation and maintenance manuals (if available), as furnished to Contractor for such items. Obtain from item’s manufacturer written instructions on handling and installation for the item and comply with such written instructions and the Contract Documents.

10. Install, connect, check out, and start up Owner-furnished materials and equipment in accordance with manufacturer’s written instructions, unless otherwise shown or indicated in the Contract Documents.

11. Perform field quality control activities for Owner-furnished items in accordance with the contract Documents. Where such items were obtained under one or more procurement contracts, Contractor shall coordinate with and cooperate with seller in performing field quality control activities.
1.3 ASSIGNED PROCUREMENT CONTRACTS
A. Contracts for procurement of materials and equipment described in this paragraph are assigned to the Contract(s) designed below, in accordance with the Agreement and the Supplementary Conditions.
   1. Assigned to Contractor: All items not noted to be Owner Furnished in Contract Documents.

1.4 ADMINISTRATIVE REQUIREMENTS
A. Coordination:
   1. Review installation procedures for Owner-furnished materials and equipment and coordinate installation of items to be installed with or before Owner-furnished materials and equipment.

B. Scheduling:
   1. Schedule and perform the Work to coordinate with anticipated delivery dates for Owner-furnished materials and equipment, as indicated in Owner’s procurement contract(s) therefor.
   2. Where Owner will furnish services of a manufacturer’s representative for Owner-furnished materials and equipment, schedule and perform the Work in accordance with scheduling constraints of manufacturer’s representative.

1.5 HANDLING AND STORAGE
A. Handling:
   1. Handle Owner-furnished materials and equipment in accordance with the Contract Documents and the item manufacturer’s written instructions. Handle so that warranties in effect are not voided.

B. Storage:
   1. Store Owner-furnished materials and equipment in accordance with the Contract Documents and the item manufacturer’s instructions. Store so that warranties in effect are not voided.

PART 2 - PRODUCTS - (NOT USED)

PART 3 - EXECUTION
3.1 CONTRACTOR SCOPE OF SUPPLY
A. The Contractor is responsible for all field terminations and electrical conduits. The field terminations include the lamp cable to ballast terminations within the ballast enclosures. There is one lamp cable per lamp, with four (4) terminations per lamp cables. Any additional terminations and conduits are also the responsibility of the contractor.

B. The Contractor is responsible for ballast card installation; there is one ballast for every two lamps (estimated 1-2 minutes per ballast card).

C. The Contractor is responsible for supplying and installing an influent flow measurement to the UV system PLC (4 – 20 mA signal).

D. The Contractor is responsible for setting in place and anchoring all electrical enclosure(s) as indicated in the drawings. The Contractor shall also be responsible for the power feed(s) to the ballast distribution enclosure(s).
   1. 480V, 3-phase, 4 wire plus ground (wye), 60 Hz
   2. All conduits and conductors are the responsibility of the Contractor.

E. The Contractor is responsible for setting in place and anchoring the components as indicated in the drawings.
F. Contractor is responsible for setting in place and anchoring the compressed air supply as indicated in the drawings. The Contractor shall also be responsible for the power feed to the air compressor and automatic drain.
1. 460V, 3-phase, 60 Hz to air compressor
2. All conduits and conductors are the responsibility of the Contractor.
3. Airline (3/8” diameter) from compressor to banks shall be supplied by the Contractor.

G. Contractor is responsible for concrete work including foundations, bases, floor openings, sumps, basins, grout, trenches, and concrete embedment.

H. Contractor is responsible for setting in place and anchoring the water level control device(s) to the channel walls and bottom ensuring water tightness.

I. Contractor is responsible for setting in place and anchoring the water level sensor(s) indicated in the drawings. Size of the conduit to be the responsibility of the contractor.

J. Contractor is responsible for supplying a climate-controlled building (maximum ambient air temperature = 104°F) for all electrical enclosures and ancillary equipment. Building shall be located within 40-50 feet of the UV channel(s).

K. Contractor is responsible for the unloading of all the components supplied by Wedeco. The Contractor is also responsible for storage of all the components if required in a clean, dry environment.

L. Contractor is responsible for supplying and installing any required inlet slide gate(s).

M. Contractor is responsible for supplying and installing a light-tight covering for the channel(s).

N. Contractor is responsible for supplying and installing a dedicated phone line for the modem connection.

O. Contractor is responsible for supplying and installing a lifting device for individual module removal (500 lbs. minimum capacity).

P. Contractor is responsible for video-taping of training if required.

END OF SECTION
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PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. General requirements for:
      a. Coordination of deliveries.
      b. Preparing materials and equipment for shipping from the production or fabrication facility, including packaging.
      c. Shipment.
      d. Delivery of materials and equipment to the Site.
      e. Inspection upon delivery and remedy of damaged, deteriorated, or otherwise defective items, and remedy of missing or lost items.

B. Scope:
   1. Contractor shall make all arrangements for packaging, shipping, delivering, inspecting upon delivery, and unloading upon delivery materials and equipment necessary and required for the Work.
   2. Contractor shall provide all labor, materials, equipment, tools, incidentals, and services necessary to have materials and equipment properly packaged, shipped, and delivered to the Site, and all related Work required by the Contract Documents.

C. Related Requirements: Include but are not limited to:
   1. Section 01 35 43.13 - Environmental Procedures for Hazardous Materials.
   2. Section 01 66 00 - Product Storage and Handling Requirements.

1.2 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
   1. To extent practicable, coordinate shipping and delivery of materials and equipment with anticipated shipping requirements, such as allowing sufficient time for customs inspections on international shipments, availability of shipping services and facilities, and seasonal concerns (such as shipments that may be influenced by major tropical storms and predictable, typical weather).
   2. Coordinate shipping and delivery of materials and equipment to the Site and other locations where such items may be stored prior to delivery to the Site. Coordinate such shipments and deliveries with the progress of the Work and status of adequate facilities, whether temporary storage or permanent installation locations, necessary to properly store and safeguard materials and equipment to be incorporated into the Work.
   3. Where possible, deliver to the Site materials and equipment as close as possible to when such items will be incorporated into appropriately protected, permanent installation location.

1.3 PREPARATION FOR SHIPMENT

A. Factory Assembly:
   1. When practical, factory-assemble materials and equipment. Mark or tag separate parts and assemblies to facilitate field assembly.

B. Temporary Protection:
   1. Appropriately cover, with strippable, protective coating or other material, machined parts and unpainted, uncoated, or unprotected surfaces subject to damage or deterioration caused by weather elements or environment,
   2. To extent practical, strippable, removable, disposable protective materials shall be recyclable.
3. To extent practical, avoid strippable, removable, and disposable protective items shall be type resulting in minimum waste and cleanup upon removal.

4. Protection of Electrical Equipment, Instrumentation and Controls, Items with Computer Chips Solid-State Devices, and Other Electronics:
   a. Provide appropriate temporary protection of electrical equipment, microprocessors, and other electronics from humidity, moisture, and corrosion by appropriate packaging, protection, desiccants, and volatile corrosion inhibitor (VCI) blocks.
   b. Immediately prior to shipment, provide new, fresh desiccants and ensure integrity of other protective materials.

C. Packaging:
   1. Package materials and equipment to facilitate handling, and protect materials and equipment from damage during shipping, handling, and storage.
   2. Mark, label, or tag, on outside of each package, crate, and container, to indicate associated:
      a. Purchase order number.
      b. Bill of lading number.
      c. Delivery address (including facility name, where applicable).
      d. Owner’s contract designation or Project name.
      e. Contractor name.
      f. Purchasing Subcontractor’s name (as applicable).
      g. Contents by name and designation within the Work (for example, “Influent Pump No. 1”),
      h. Approximate weight of container, crate, package, including packaging.
      i. Special instructions for handling and protection during shipment and unloading.
      j. Comply with Section 01 35 43.13 - Environmental Procedures for Hazardous Materials, when materials or equipment contain Constituents of Concern.
   3. The Site may be listed as the “ship to” or “delivery” address; but Owner or facility manager shall not be listed as recipient of shipment unless otherwise directed in writing by Engineer.
   4. Truthfully and accurately mark, label, or tag items for shipment and delivery.
   5. Include complete packing lists and bills of materials with each shipment.
   6. Protect materials and equipment with appropriate, temporary packaging or protection when such items may rotate or move during shipment.
   7. Protect materials and equipment from exposure to weather elements, adverse environments, and keep thoroughly dry and dust-free. Protect painted surfaces against impact, abrasion, discoloration, and other damage and deterioration.
   8. Lubricate bearings and other items requiring lubrication, in accordance with manufacturer’s written instructions.

1.4 SHIPPING

A. Notification of Shipments:
   1. Keep Engineer and Owner informed of delivery of all materials and equipment to be incorporated into the Work.
   2. Upon receipt of Supplier’s advance notice of shipment, not less than seven days prior to delivery of materials and equipment at the Site or Contractor’s storage location, furnish Engineer and Owner written notice of anticipated delivery date and specific location (at the Site or Contractor’s storage location, as applicable) of the following:
      a.

B. Do not ship materials and equipment until:
   1. Related Shop Drawings, product data, Samples, shop testing plan Submittals, and other Submittals required by the Contract Documents are approved by Engineer, including, but not necessarily limited to, all Action Submittals associated with the materials and equipment being delivered.
   2. Manufacturer’s written instructions for handling, storing, and installing the associated materials and equipment have been submitted to and accepted by Engineer, in accordance with the Specifications.
3. Results of source quality control activities (factory testing and inspections), when required by the Contract Documents for the subject materials or equipment, have been submitted to and accepted by Engineer.
4. Facilities required for handling materials and equipment, in accordance with the Contract Documents and manufacturer’s instructions, are in place and available at the delivery location.
5. Required storage facilities and protection measures have been provided.

C. Loss or Damage During Shipment:
1. Unless otherwise indicated in the Contract Documents (whether expressly or in provisions regarding builder’s risk insurance), Contractor is responsible for all loss, damage, and deterioration to materials and equipment incurred during shipment and delivery.
2. Contractor is not eligible for additional Contract Times or increase in the Contract Price due to delays or costs incurred due to loss, damage, or deterioration during shipment, unless Owner was responsible for shipping the subject materials or equipment to the Site or other delivery location.

1.5 DELIVERY

A. Scheduling and Timing of Deliveries:
1. Arrange deliveries of materials and equipment in accordance with the Progress Schedule accepted by Engineer and in ample time to facilitate inspection and observation prior to installation.
2. Schedule deliveries to minimize space required for, and duration of, storage of materials and equipment at the Site or other delivery location, as applicable.
3. Coordinate deliveries to avoid conflicting with the Work and conditions at the Site, and to accommodate the following:
   a. Work of other contractors at or adjacent to the Site, Owner, and others.
   b. Storage space limitations.
   c. Availability of appropriate construction equipment and machinery, tools, and qualified personnel for inspecting, unloading, and handling materials and equipment.
   d. Owner’s use of premises.
4. Deliver materials and equipment to the Site during regular working hours.
5. Deliver materials and equipment to avoid delaying the Work and the Project.

B. Deliveries:
1. Provide Contractor’s telephone number to shipper; do not provide Owner’s telephone number to shipper or carrier.
2. Arrange for deliveries while Contractor’s personnel are at the Site. Contractor shall receive and coordinate shipments upon delivery. Shipments delivered to the Site when Contractor is not present will be refused by Owner, and Contractor shall be responsible for the associated delays and costs, including demurrage.
3. Comply with Section 01 35 43.13 – Environmental Procedures for Hazardous Materials, as applicable.

C. Containers and Marking:
1. Have materials and equipment delivered in manufacturer’s original, unopened, labeled containers.
2. Clearly mark partial deliveries of component parts of materials and equipment to identify materials and equipment, to allow easy accumulation of parts, and to facilitate assembly.

D. Inspection of Materials and Equipment Upon Delivery:
1. Immediately upon delivery, visually but critically inspect shipment to verify that:
   a. Materials and equipment comply with the Contract Documents and approved or accepted (as applicable) Submittals.
   b. Quantities are correct.
   c. Materials and equipment are undamaged and of required quality.
   d. Containers and packages are intact and labels are complete and legible.
2. Eligibility for Payment:
   a. Materials and equipment are not eligible for payment until duly inspected and determined to be in accordance with the Contract Documents and Engineer-approved Submittals, without damage or deterioration.
   b. No payment can be made for damaged, deteriorated, or otherwise defective items.
   c. No payment can be made for missing or lost items.
   d. Other provisions of the Contract Documents may establish other preconditions for payment for delivered material and equipment.

3. Damaged, Deteriorated, and Otherwise Defective Items:
   a. Promptly remove from the Site damaged, deteriorated, or defective materials and equipment and expedite delivery of new, undamaged materials and equipment.
   b. Promptly remedy incomplete or lost materials and equipment.
   c. Furnish materials and equipment in accordance with the Contract Documents, to avoid delaying progress of the Work.
   d. Promptly advise Engineer and Owner in writing: (1) when damaged, deteriorated, incomplete, or otherwise defective materials and equipment are delivered, and (2) associated impact on the Progress Schedule.

E. Handling of Materials and Equipment Upon Delivery:
   1. Provide construction equipment and machinery, tools, and qualified personnel necessary to unload and handle materials and equipment, including those furnished by Owner, by methods that prevent damaging, defacing, and soiling materials and equipment and packaging.
   2. Comply with Section 01 66 00 – Product Storage and Handling Requirements.
   3. Comply with manufacturer’s storage guidance for Owner Furnished equipment such that warranties in effect are not voided.
   4. Provide additional protection during unloading and handling as necessary to prevent scraping, marring, and otherwise damaging materials and equipment and adjacent surfaces.
   5. Unload and handle materials and equipment by methods that prevent bending, warping, and overstressing.
   6. Lift heavy components only at designated lifting points.
   7. Unload and handle materials and equipment in safe manner and as recommended by manufacturer to prevent damage. Do not drop, roll, or skid materials and equipment off delivery vehicles or at other times during unloading and handling.

PART 2 - PRODUCTS - (NOT USED)

PART 3 - EXECUTION - (NOT USED)

END OF SECTION
SECTION 01 66 00
PRODUCT STORAGE AND HANDLING REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY
A. Section Includes:
   1. General requirements for:
      a. Payment considerations for stored materials and equipment.
      b. Handling of materials and equipment.
      c. Storage of materials and equipment, including:
         1) General provisions for storage.
         2) Storage locations.
         3) Protection of stored items.
         4) Storage of items containing Constituents of Concern.
         5) Outdoor, uncovered storage.
         6) Outdoor, covered storage.
         7) Fully-protected storage.
         8) Removal of temporary storage facilities and restoration of storage areas.
      d. Maintenance of storage.

B. Scope:
   1. Contractor shall provide all labor, materials, equipment, tools, services, lands, and
      incidentals necessary and required to store and handle materials and equipment to be
      incorporated into the Work, and other materials and equipment at the Site, adjacent areas,
      and offsite storage areas.
   2. Comply with Section 01 71 33 - Protection of the Work and Property, relative to handling
      and storing materials and equipment.

C. Related Requirements: Include but are not limited to:
   1. Section 01 35 43.13 - Environmental Procedures for Hazardous Materials.
   2. Section 01 65 00 - Product Delivery Requirements.

1.2 PRICE AND PAYMENT PROCEDURES
A. Measurement and Payment:
   1. Materials and equipment delivered but not suitably stored and protected will not be eligible
      for payment.
   2. Engineer may recommend reduction in payment, and Owner may reduce payments to
      Contractor (“set-offs”) by an appropriate amount when stored items are subsequently
      revealed to be improperly stored or protected.
   3. Payment for Suitably Stored Items:
      a. Requirements for payment for materials and equipment delivered and suitably stored,
         but not yet incorporated into the Work, are in the General Conditions, as may be
         modified by the Supplementary Conditions.
      b. Materials and equipment delivered and suitably stored, but not yet incorporated into the
         Work, will not be eligible for payment until the inspection upon delivery, required in
         Section 01 65 00 - Product Delivery Requirements, is completed and Engineer concurs
         that such items generally appear to be in good condition, in accordance with the
         Contract Documents, and are of the required quality and quantity.

1.3 SUBMITTALS
A. Informational Submittals: Submit the following:
   1. Affidavits of Inspection and Maintenance Performed on Mechanical and Electrical
      Equipment in Long-Term Storage:
PRODUCT STORAGE AND HANDLING REQUIREMENTS

1.4 HANDLING

A. Handling of Materials and Equipment – General:
   1. Handle materials and equipment to be incorporated into the Work in accordance with the Contract Documents and manufacturer’s written instructions.
   2. During handling and assembling of materials and equipment:
      b. Comply with:
         1) Section 01 65 00 - Product Delivery Requirements.
      c. Do not drop, drag (without appropriate rollers or skids), or scrape materials and equipment.
      d. Use proper construction equipment and machinery, and tools, operated by sufficient number of qualified personnel.
      e. Maintain materials and equipment in neutral position.
      f. Do not exert undue stress on materials and equipment.
      g. Do not deform, bend, or damage materials and equipment.
      h. Do not deform or mar shafts, bearings, or other parts.

B. Additional Requirements for Hoisting and Lifting:
   1. When lifting or hoisting, support materials and equipment from appropriate lifting points using proper hooks and suitable nylon lifting straps, chains, and cables. Do not mar or scrape surfaces of materials and equipment during handling.
   2. 
   3. Do not support rigging from building or structure without written approval of Engineer.
   4. Contractor is responsible for and shall remedy damage to building and structure resulting from Contractor’s operations.

1.5 STORAGE

A. Storage – General:
   1. Contractor shall make all arrangements and provide all measures necessary and required for, and pay all costs associated with, storing materials and equipment.
   2. Store materials and equipment in accordance with the Contract Documents and manufacturer’s written instructions. In event of conflict between the Contract Documents and manufacturer’s written instructions regarding storage and protection, comply with the more-stringent, more-protective requirements.
   3. Records:
      a. Establish and maintain up-to-date account of materials and equipment in storage, to facilitate preparation of progress payment requests, if the Contract Documents provide for payment for materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing.
      b. Submit affidavits of inspection and maintenance of mechanical and electrical equipment in long-term storage in accordance with this Section’s Article 3.1 (“Maintenance of Storage”).
   4. Arrange stored materials and equipment to allow easy access for observation or inspection by Owner, Engineer, , Owner-hired testing and inspection entities, and authorities having jurisdiction.
   5. Inspect and maintain stored materials and equipment in accordance with this Section’s Article 3.1 (“Maintenance of Storage”).

B. Storage Location:
1. Area(s) available at the Site for storing materials and equipment are addressed in Section 01 14 19 - Use of Site.
2. When onsite storage is insufficient, Contractor shall provide additional lands for storage facilities as necessary and required for the Work.
3. Restrictions on Storage Locations:
   a. Do not store materials or equipment in structures being constructed unless approved by Engineer in writing.
   b. Do not use lawns, landscaped areas, or private property for storage without written permission of property owner.
   c. Comply with:
      1) Section 01 14 19 - Use of Site.

C. Protection of Stored Items – General:
1. Store materials and equipment indicated below to ensure preservation of quality and fitness for intended uses in the Work, including proper protection against damage and deterioration resulting from: water (including precipitation, flood, and other), moisture, humidity, wind, dust, and freezing. Relative Humidity (RH) in the storage area shall not deviate from the range of 40 percent, plus-or-minus 5 percent. Temperature in the storage area shall not deviate from the range of 8°C to 28°C (46°F to 82°F) per the Owner Furnished UV disinfection system documentation. Temperature and humidity inside crates, containers, storage structures, and packaging may be significantly higher than outdoor ambient air temperature.
2. Store in indoor, climate-controlled storage all materials and equipment subject to damage or deterioration by water, moisture, humidity, heat, cold, and other elements, unless otherwise acceptable to Owner and Engineer.
3. Do not open manufacturer’s crates, containers, and packaging until time of installation, unless recommended by the manufacturer or otherwise required in the Contract Documents.
4. Store all materials and equipment off the ground (or floor) on raised supports such as skids or pallets.
5. Electrical Equipment, Instrumentation and Controls, Items Containing Computer Chips, Solid-State Devices, and Other Electronics:
   a. Contractor shall obtain, coordinate, and comply with specific temperature, humidity, and environmental limitations on materials and equipment, because temperature inside cabinets and components stored in warm temperatures can approach 200°F.
   b. Protect from water, moisture, humidity, dust, heat, cold, and other potentially harmful elements and environments. Space heaters provided in equipment shall be connected and operating at all times until equipment is connected to active, permanent, electrical power.
   c. Provide inside each electrical panel, control panel, and other enclosures with electronic device(s) each of the following: (1) desiccant, (2) volatile corrosion inhibitor (VCI) blocks, (3) moisture indicator, and (4) maximum- and minimum-indicating thermometer.
   d. Check panels and equipment not less than once per month. Replace desiccant, VCI, and moisture indicator the earlier of: (1) as often as necessary, or (2) every six months.
   e. Establish and maintain certified record of daily maximum and minimum temperature and humidity in storage facility. Such records shall be available for Engineer’s and Owner’s inspection upon request. Certified record of monthly inspection, noting maximum and minimum temperature for month, condition of desiccant, VCI, and moisture indicator, shall be available to Engineer and Owner upon request.
6. Finished Surfaces:
   a. Protect finished surfaces against impact, abrasion, discoloration, and other damage.
   b. Remedy, in accordance with requirements of item manufacturer and finishing system manufacturer damaged, marred, or deteriorated finishes, to Engineer’s satisfaction.
7. Contractor is fully responsible for loss, damage, and deterioration, including theft and vandalism, to stored materials and equipment.
D. Storage of Materials or Equipment Containing Constituents of Concern:
   1. Prevent contamination of personnel, storage areas, the Site, and adjacent areas.

E. Uncovered Storage:
   1. The following materials may be stored outdoors without cover on supports, so there is no contact with the ground:
      a. Reinforcing steel.
      b. Precast concrete materials.
      c. Structural steel.
      d. Metal stairs.
      e. Handrails and railings.
      f. Grating.
      g. Checker plate.
      h. Metal access hatches, such as floor doors, roof hatches, and the like.
      i. Castings.
      j. Fiberglass items.
      k. Rigid electrical conduit, except PVC-coated conduit.
      l. Fencing intended for permanent, outdoor installation.
      m. Piping, except PVC or chlorinated PVC (CPVC) pipe.

F. Covered Storage:
   1. The following materials and equipment may be stored outdoors on supports and completely covered with covering impervious to water:
      a. Grout and mortar materials.
      b. Masonry units.
      c. Metal decking.
      d. Rough lumber.
      e. Soil materials and granular materials such as aggregate.
      f. PVC and CPVC pipe.
      g. PVC-coated electrical conduit.
      h. Filter media.
   2. Properly and fully secure covers against coming loose in strong winds.
   3. Install coverings properly sloped to prevent accumulation of water.
   4. Loose Soil Material and Loose Granular Material:
      a. Store such materials in well-drained areas.
      b. Prevent mixing of such materials with foreign matter. Provide underlying separation layer or store on solid, impervious surface, where appropriate.

G. Fully-Protected Storage:
   1. Store all materials and equipment not indicated in the provisions above regarding uncovered storage and covered storage on supports, in buildings, trailers, or other suitable temporary storage facility with concrete or wood flooring, solid and impervious roof, and fully closed walls on all sides.
   2. Covering with visqueen plastic sheeting or similar material in storage space without floor, roof, and walls is unacceptable.
   3. Provide heated storage for materials and equipment that could be damaged or deteriorate by low temperatures or freezing.
   4. Provide air-conditioned storage for materials and equipment that could be damaged or deteriorate by high temperature or humidity.
   5. Protect mechanical and electrical equipment from being contaminated by dust, dirt, and moisture.
   6. Maintain temperature and humidity at levels recommended by materials and equipment manufacturers.
7. Prevent infestation of stored items by pests and rodents. Promptly and properly remedy such infestation when apparent.

H. Removal of Temporary Storage Facilities and Restoration of Storage Areas:
   1. Completely remove temporary storage facilities when no longer necessary for the Work.
   2. Restore areas used for storage and areas occupied by temporary storage facilities, in accordance with the Contract Documents

PART 2 - PRODUCTS - (NOT USED)

PART 3 - EXECUTION

3.1 MAINTENANCE OF STORAGE

A. On a scheduled basis, periodically inspect stored materials and equipment to ensure that:
   1. Condition and status of storage facilities is adequate to provide required storage conditions.
   2. Required environmental conditions are maintained on continuing basis.
   3. Materials and equipment exposed to weather elements or other environment are not adversely affected.

B. Mechanical and Electrical Equipment in Long-Term Storage:
   1. Meaning of the term “long-term storage” is as established in written instructions of manufacturer of associated materials or equipment.
   2. Mechanical and electrical equipment requiring long-term storage shall have complete manufacturer’s written instructions for servicing each item, with notice of enclosed instructions shown on exterior of crate, container, or packaging.
   3. Frequency of inspections and maintenance of stored items shall be in accordance with manufacturer’s written instructions.
   4. For mechanical equipment with bearings and shafts, manually rotate shaft during inspection and maintenance, as recommended by equipment manufacturer.
   5. Space heaters that are part of electrical equipment shall be connected and operated continuously until equipment is connected to permanent electrical power supply.
   6. Other requirements for maintenance during storage of electrical equipment, instrumentation and controls, items with computer chips, solid-state devices and other electronics are in this Section’s provision on general protection during storage.

C. Affidavits:
   1. Submit to Engineer affidavit for each time maintenance and inspection was performed on materials and equipment in long-term storage. Affidavit shall be signed by Contractor and entity performing the inspection and maintenance on the stored items.
   2. Indicate on affidavit:
      a. Date of inspection.
      b. Personnel involved and employer of each.
      c. Condition of storage environment.
      d. Specific stored items inspected, equipment condition, problems observed, problems corrected, maintenance tasks performed, and other relevant information.
      e. Signature of Contractor’s person responsible for the inspection and maintenance.
      f. Signed and notarized statement by items’ manufacturer indicating whether storage conditions and tasks performed are suitable for continued compliance with manufacturer’s warranties.
   3. Submit each affidavit, complete, not later than seven days after performing associated inspection and maintenance.

END OF SECTION
PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:
   1. Construction mobilization and demobilization.

B. Scope:
   1. Contractor shall provide all labor, materials, equipment, tools, services, and incidentals to perform mobilization and demobilization for the Work.
   2. This Section is general and does not necessarily indicate all activities required for mobilization and demobilization, which may be indicated in other parts of the Contract Documents.

C. Related Requirements: Include, but are not necessarily limited to:
   1. Section 01 29 73 - Schedule of Values.

1.02 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment:
   1. Where costs of mobilization and demobilization are to be included in a specific bid/pay item, such item is indicated in the Contract.
   2. Where the Contract does not expressly require costs for mobilization and demobilization are to be under specific bid/pay item(s), Contractor may allocate such costs among bid/pay items as Contractor deems appropriate.
   3. Where mobilization and demobilization is to be part of a larger lump sum bid/pay item, limitations on eligibility for payment of mobilization and demobilization costs are indicated in Section 01 29 73 - Schedule of Values.

B. If costs for mobilization, demobilization, or both change as a result of Contract modifications, include the total cost of such changes to mobilization and demobilization in Change Proposal submitted for each associated change. Make no subsequent claim, whether via Change Proposal, Claim, or dispute, for additional compensation for mobilization, demobilization, or both.

1.03 MOBILIZATION AND DEMOBILIZATION - GENERAL

A. Do not commence mobilization at the Site or other areas until:
   1. The Contract is signed by both parties and is effective.
   2. Required insurance documentation, performance bond, and payment bond have been submitted by Contractor and accepted by Owner, and builder’s risk insurance complying with the Contract Documents is furnished and in place, and documentation thereof accepted by the parties.
   3. Conditions, if any, of Owner-issued Notice to Proceed, if any, have been complied with by the applicable party.
   4. Preconstruction conference(s), including items on agenda for site mobilization matters, is completed.
   5. Preconstruction photographic documentation is obtained and submitted in accordance with the Contract Documents.

B. Mobilization Work includes, but is not limited to:
   1. Establishing vehicular access and parking as coordinated with Owner.
   2. Establishing Contractor’s staging and laydown areas as coordinated with Owner.
   3. Establishing required and necessary temporary project signage.
   4. Other mobilization Work required by the Contract Documents, including Section 01 29 73 - Schedule of Values.
C. Demobilization Work includes, but is not limited to:
   1. Removing from the Site and other areas Contractor’s temporary utilities, temporary facilities, temporary signage, temporary security measures; construction equipment, machinery, and tools; unused items of materials and equipment; and other items.
   2. Final restoration and repair of damage caused by Contractor.
   3. Other demobilization Work required by the Contract Documents, including Section 01 29 73 - Schedule of Values.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION - (NOT USED)
PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Administrative and procedural requirements for checkout and startup of equipment, systems, and facilities.

B. Scope:
1. Contractor shall initially check out, start up, and place equipment and systems installed under the Contract into successful operation, in accordance with the material and equipment manufacturers’ written instructions, Suppliers’ recommendations at the Site, and the Contract Documents.
2. Provide the following:
   a. All labor, tools, materials, and equipment required to complete equipment and system checkout and startup.
   b. Chemicals, lubricants, and other required operating fluids necessary for checkout, startup, and initial operation of the Work.
   c. Filters and other temporary or consumable items necessary for checkout, startup, and initial operation of the Work.
   d. Fuel, electricity, water, and other temporary utilities and temporary facilities necessary for checkout and startup of equipment and systems, unless otherwise specified.
3. The General Conditions, as may be modified by the Supplementary Conditions, and Section 01 77 19 - Closeout Requirements, address requirements for documenting Substantial Completion.

C. Related Sections include but are not necessarily limited to:
1. Section 01 77 19 - Closeout Requirements.

1.2 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
1. Coordinate checkout and startup with other contractors, as necessary.
2. Do not start up equipment or system(s) for continuous operation until all components of that equipment item or system, including instrumentation and controls, have been tested to the extent practicable and proven to be operable as intended by the Contract Documents.
3. Subject to the constraints of this Specifications section, Owner will furnish sufficient personnel to assist Contractor in starting up equipment and system(s), but responsibility for proper operation of the Work is Contractor’s.
4. Supplier shall be present during checkout, startup, and initial operation, unless otherwise acceptable to Engineer or otherwise required by the Contract Documents.
5. For startup of heating equipment, air conditioning equipment, and other equipment and systems that provide temperature control, that are dependent upon the time of year, return to the Site at beginning of next heating or cooling season (as applicable) to recheck and start the appropriate equipment and system(s).
6. Do not start up equipment and system(s), without submitting acceptable preliminary operations and maintenance manuals by Contractor in accordance with the Contract Documents.

B. Checkout and Startup Planning Meeting:
1. Contractor, with appropriate Subcontractors and Suppliers, shall attend and participate in a meeting with Owner, facility manager, and Engineer to discuss planning, scheduling, and coordination of checkout and startup activities.
2. Upon mutual concurrence of Owner, Engineer, and Contractor, meeting may be concurrent with the training scheduling planning meeting required.

3. Meeting shall be held by the earlier of: (1) not less than 60 days prior to first scheduled training session for the equipment and system(s) to be checked out and started-up, and (2) not less than 60 days prior to the checkout and startup of the associated equipment and system(s).

4. Attend meeting prepared to knowledgeably and effectively discuss:
   a. Status of the Work and schedule-to-complete for requirements prerequisite to checkout and startup.
   b. Schedule for and status of training required for each equipment item and system.
   c. Schedule for checkout, startup, and field quality control activities for the subject Work.
   d. Status and quantities of required consumables, lubricants, and utility services necessary for checkout and startup.

5. Meeting will be chaired by Engineer. Engineer will prepare and distribute a record of topics discussed and decisions made during the meeting. If meeting is concurrent with the training scheduling planning meeting required, Contractor shall chair and prepare minutes of the training scheduling planning portion of the meeting and furnish its draft minutes to Engineer to incorporate into the overall minutes.

6. Comply with decisions made at the meeting and the Contract Documents.

C. Sequencing:
   1. Comply with Section 01 11 00 - Summary of Work, Subsection 1.6., regarding staging (phasing) of the Work and allowable shutdowns.

D. Scheduling:
   1. Progress Schedule:
      a. Clearly indicate in the Progress Schedule planned and actual dates for checkout, startup, and field quality control activities, including all demonstration testing activities addressed in this Specifications section and elsewhere in the Contract Documents. Separately indicate checkout, startup, and field quality control activities for each equipment item and system.
      b. Perform startup and field quality control activities on the associated, scheduled dates, unless otherwise acceptable to Owner and Engineer.

2. Restrictions for Scheduling:
   a. Checkout of materials, equipment, and systems by Contractor that do not involve or require Owner’s or facility manager’s personnel may be performed at any time during normal working hours. Where required by the Contract Documents or requested by Engineer, perform checkout in the presence of Engineer or Resident Project Representative (RPR).
   b. Startup, including initial operation of materials, equipment, and systems, shall not be initiated on: Monday, Friday, Saturday, Sunday, Owen’s holidays, the day immediately prior to a holiday, or the day immediately following a holiday, unless otherwise acceptable to Owner and Engineer.
   c. Unless otherwise indicated in the Contract Documents or acceptable to Owner and Engineer, perform all startup during normal working hours of the day shift.
   d. To the extent practicable, where extended-duration startup or field quality control activities are required by the Contract, avoid having such activities extend into evening, night, weekend, or holiday hours.
   e. Owner reserves the right to require a minimum seven days' notice of rescheduled startup when Contractor cannot perform the associated activities as scheduled.

3. Operation and Maintenance Data:
   a. A preliminary copy of all operation and maintenance manuals shall be received by Engineer prior to the start of the demonstration period.

1.3 QUALITY ASSURANCE

A. Regulatory Requirements:
1. Do not start up equipment or systems or place into initial operation until required operating permits are obtained from authorities having jurisdiction.

2. Where Owner (with or without assistance of Engineer) has applied for and obtained initial approvals or permits necessary for operation, Contractor shall furnish information and assistance to Owner or Engineer for Owner to secure final approvals from authorities having jurisdiction for required operating permits.

1.4 DEFINITIONS

A. The following defined terms are used in this Specifications Section:

1. **Instrumentation Supplier**: Entity retained by Contractor, Subcontractor, or Supplier to furnish instrumentation or controls that will be part of the completed Work, including manufacturers, manufacturer representatives, wholesalers, retailers, and others, including entities retained to perform systems integration Work.

2. **Project Classified System (PCS)**: An established, distinct part of the Project, consisting of an arrangement of items, such as equipment, structures, components, piping, cabling, materials, and incidentals, so related or connected to form an identifiable, unified, functional, operational, safe, and independent system. PCSs may be specifically indicated in this Specifications section or elsewhere in the Contract Documents.

3. **Pre-Demonstration Period**: The period of time, of unspecified duration after initial construction and installation activities during which Contractor, with assistance from manufacturer's representatives, performs in the following sequence:
   a. Finishing type construction work to ensure the Project has reached a state of Substantial Completion.
   b. Equipment start-up.
   c. Personnel training.

4. **Demonstration Period**: A period of time, of specified duration, following the Pre-Demonstration Period, during which the Contractor initiates process flow through the Project Classified System and starts up and operates the Project Classified System, without exceeding specified downtime limitations, to prove the functional integrity of the mechanical and electrical equipment and components and the control interfaces of the respective equipment and components comprising the Project Classified System as evidence of Substantial Completion.

1.5 SUBMITTALS

A. **Action Submittals**: Submit the following:
   1. Data collection and reporting log for each required Demonstration Period.

B. **Informational Submittals**: Submit the following:
   1. Progress Schedules indicating dates for checkout, startup, and field quality control activates.
   2. Completed checkout and startup log required in Paragraph 3.2.C of this Specifications section.
   3. Manufacturer's installation check letters (also known as Manufacturer’s Field Services Report) required in Paragraph 3.2.C of this Specifications section.
   4. Instrumentation Supplier’s Instrumentation Installation Certificate, required in Paragraph 3.2.C of this Specifications section.
   5. Letter verifying completion of all pre-demonstration startup activities, required in Paragraph 3.2.C of this Specifications section.
   6. Report of data collected during each required Demonstration Period.
   7. Qualifications Statements:
      a. Qualifications, including resume’ and copy of license, of Contractor-retained licensed operator.
PART 2 - PRODUCTS - (NOT USED)

PART 3 - EXECUTION

3.1 CHECKOUT AND STARTUP – GENERAL

A. Facility Startup Divided into Two Periods:
   1. Pre-Demonstration Period including:
      a. Obtain Engineer’s approval or acceptance (as applicable) of Submittals required prior
to checkout and startup, including all Shop Drawings, Samples, source quality control
(shop testing) Submittals, preliminary operation and maintenance manuals, and other
Submittals required by the Contract Documents, other than Submittals that cannot be
furnished until after startup.
      b. Complete the Work to a point ready for checkout and startup, including operation
available in all manual, automatic, and other modes.
      c. Checkout and initial field quality control activities that can be performed prior to
startup of the equipment or system.
      d. Startup of the associated Work.
      e. Field quality control activities for the subject Work as indicated elsewhere in the
Specifications and other Contract Documents, other than this section.
      f. Training of operations and maintenance personnel.
   2. Demonstration Period, including:
      a. Demonstration of functional integrity of equipment, system, or PCS.

3.2 PRE-DEMONSTRATION PERIOD

A. Prior to the Pre-Demonstration Period, complete the Work to the point where it is ready for
checkout and startup.

B. Checkout.

C. Startup:
   1. Comply with requirements for startup of materials, equipment, and systems indicated in the
associated Specification sections and elsewhere in the Contract Documents.
   2. Prepare the Work so it will operate properly and safely and be ready to demonstrate
functional integrity during the Demonstration Period.
   3. Perform startup to extent possible without introducing process flow.
   4. Introduce process flow to complete startup for the following:
      a. UV-101.
      b. UV-102.
      c. COMP-101.
      d. LE/LIT-101.
      e. LE/LIT-102.
      f. LE/LIT-103.
      g. LE/LIT-104.
      h. Electronic slide gate actuators.
   5. Procedures include but are not necessarily limited to the following:
      a. Test or check and correct deficiencies of:
         1) Power, control, and monitoring circuits for continuity prior to connection to power
source.
         2) Voltage of all circuits.
         3) Phase sequence.
         4) Cleanliness of connecting piping systems.
         5) Alignment of connected machinery.
         6) Lubrication.
         7) Valve orientation and position status for manual operating mode.
         8) Instrumentation and control signal generation, transmission, reception, and
response.
9) Tagging and identification systems.
10) Proper connections, alignment, calibration and adjustment.
   b. Calibrate safety equipment.
   c. Manually rotate or move moving parts to assure freedom of movement.
   d. “Bump-start” electric motors to verify proper rotation.
   e. Perform other tests, checks, and activities required to make the Work ready for
      Demonstration Period.
   f. Checkout and Startup Log:
      1) Prepare a log showing each equipment item and system requiring checkout and
         startup. Indicate in the log activities to be accomplished during checkout and
         startup.
      2) Provide a place for Contractor to record date and person performing required
         checkout and startup. Indicate associated date(s), personnel, and employer of each.
      3) Submit completed checkout and startup log to Engineer and obtain Engineer’s
         acceptance.
   6. Obtain Suppliers’ certifications of the installed and operational Work, without restrictions,
      and submit to Engineer:
      a. Manufacturer’s installation check letters (sometimes referred to as Manufacturer’s Field
         Services Report).
      b. Instrumentation Supplier’s Instrumentation Installation Certificate.
   7. Letter verifying completion of all pre-demonstration startup activities including receipt of
      all specified items from Suppliers as final item prior to initiation of Demonstration Period.
   8. Personnel Training:

3.3 DEMONSTRATION PERIOD

A. Demonstration Period – General:
   1. Demonstrate the operation and performance of mechanical, electrical, instrumentation, and
      control interfaces of the Work undergoing the Demonstration Period, in accordance with the
      Contract Documents.
   2. Duration of Demonstration Period: 168 consecutive hours.
   3. If, during the Demonstration Period, the aggregate time used for repair, alteration, or
      unscheduled adjustments to any part of the Work that renders the affected Work inoperative
      or operation outside of recommended ranges exceeds 10% of the Demonstration Period, the
      demonstration of operation and performance will be deemed unacceptable and Contractor
      shall provide appropriate adjustments and remedies and re-perform the Demonstration Test,
      at no additional cost to Owner or facility manager, until acceptable results are obtained. Re-
      performance of the Demonstration Period shall comply with the same requirements as the
      original Demonstration Period.
   4. Perform the demonstration of operation and performance of the Work under full operational
      conditions.
   5. Owner’s or Facility Manager’s Personnel:
      a. Owner or facility manager (as applicable) will make available operations personnel to
         make process decisions affecting facility performance and compliance with applicable
         operating permits.
      b. Owner’s or facility manager’s assistance will be available only for process decisions.
      c. Contractor will perform all other functions associated with the Demonstration Period
         including but not limited to equipment operation and maintenance until successful
         completion of the Demonstration Period in accordance with the Contract Documents.
   6. Owner or facility manager reserves the right to simulate operational variables, equipment
      failures, routine maintenance scenarios, and similar actions and events during the
      Demonstration Period to verify the operation and performance of the Work in automatic,
      manual, and other types of operating modes, backup systems, and alternate operating
      modes.
   7. Prior to Starting Demonstration Period:
a. Prepare data collection and reporting log for sampling, analytical data, and data to be obtained by manually recording data from field or panel indicators. Not less than [30] days prior to the start of the Demonstration Period, submit the data collection and reporting log to Engineer for acceptance.

8. Timing of Start and End of Demonstration Period:
   a. Schedule the end of the Demonstration Period at a convenient time such as midnight, so the Owner or facility manager can assume operational responsibility on a new day beginning immediately after completion of the Demonstration Period.
   b. Time of beginning and ending Demonstration Period shall be agreed upon by Contractor, Owner (and facility manager, if other than Owner), and Engineer in advance of initiating Demonstration Period.

B. Demonstration Period, Evaluation, and Acceptance:
   1. Throughout the Demonstration Period, provide knowledgeable personnel to answer Owner's or facility manager's questions, provide final field instruction on select systems (where appropriate) and to respond to problems or failures of the Work.
   2. Responsibilities for Sampling and Data Collection:
      a. Use the data collection and reporting log format accepted by Engineer. Indicate data clearly and legibly.
   3. Responsibilities for Data Reporting:
      a. Submit data collected to Engineer for evaluation of acceptability of results.
   4. Data Evaluation:
      a. Engineer, in consultation with Owner and facility manager (as applicable) as necessary, will evaluate the data collected during the Demonstration Period and other information obtained during the Demonstration Period for compliance with the Contract Documents.
      b. Engineer will advise Contractor in writing of whether the data and information obtained indicate that the Demonstration Period was successfully completed.
   5. Criteria for Acceptance:
      a. UV-101 & UV-102:
         1) Provide a minimum UV does of 30 millijoules per square centimeter (mJ/cm²) at a flowrate of up to 2.80 million gallons per day (MGD).
            a) Total Suspended Solids concentration shall be no more than 10 milligrams per liter (mg/L).
            b) Biochemical Oxygen Demand concentration shall be no more than 10 mg/L.
         2) Effluent E. Coli shall be no more than 126 colony forming units (CFU) per 100 milliliters (mL) based on a 30-day geometric mean.
         3) Effluent E. Coli shall be no more than 406 CFU per 100 mL in any one sample.
      b. LE/LIT-101 & LE/LIT-102:
         1) Properly indicates to UV local control panel (LCP-01) high-water-level and low-water-level conditions.
      c. COMP-101:
         1) Provides adequate airflow at the required pressures to properly activate the automatic wiping system.
      d. LE/LIT-103 & LE/LIT-104:
         1) Properly indicate height of water above the effluent weir elevation.
         2) Properly indicate velocity of disinfected effluent upstream of the effluent weir.
         3) Provide adequate and accurate data such that SCADA can calculate an effluent flow rate based on the water level and velocity.

END OF SECTION
PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes: Administrative and procedural requirements for:
1. Substantial Completion.
2. Final inspection.
3. Request for final payment and acceptance of the Work.

1.2 SUBSTANTIAL COMPLETION

A. Substantial Completion – General:
1. Prior to requesting inspect no for Substantial Completion, perform the following for the substantially completed Work:
   a. Materials and equipment for which Substantial Completion is requested shall be fully ready for their intended use, including full operating and monitoring capability in automatic, manual, and other operating modes set forth in the Contract Documents.
   b. Permanent provisions for safety and protection, shown and indicated in the Contract Documents and associated with the substantially completed Work or for personnel accessing and using the substantially completed Work, shall be in place and ready for their intended use.
   c. Complete field quality control Work, including inspections and testing at the Site, indicated in Specifications sections for individual materials and equipment items and related Contract Documents. Submit results of, and obtain Engineer’s acceptance of, field quality control tests and inspections required by the Contract Documents.
   d. Complete checkout and startup in accordance with Section 01 75 00 - Checkout and Startup Procedures, requirements of the Specifications for the various materials and equipment in the substantially completed Work, and related Contract Documents.
   e. Spare parts, tools, and extra materials shall be delivered and accepted in accordance with the Contract Documents and documentation of Owner’s acceptance thereof has been submitted to Engineer in acceptable form.
   f. Training of the facility’s operations and maintenance personnel shall be completed in accordance with the Contract Documents.
   g. Submit and obtain Engineer’s acceptance of final operations and maintenance manuals.
   h. Obtain and submit to Engineer all required permits, inspections, and approvals of authorities having jurisdiction for the substantially completed Work to be occupied and used by Owner.
   i. Complete other tasks that the Contract requires be completed prior to Substantial Completion.
2. Procedures for requesting and documenting Substantial Completion are in the General Conditions, as may be modified by the Supplementary Conditions.
3. Sample letter for Contractor’s request for inspection for Substantial Completion is attached to this Specifications section. Use the model language of the sample letter, modified to suit the Project and the needs of Contractor’s request.
4. Unless decided otherwise by Owner and Engineer, form of certificate of Substantial Completion will be EJCDC C-625, “Certificate of Substantial Completion” (2018 edition or later), prepared by Engineer.
5. Refer to the Agreement for requirements regarding consent of surety to partial release of or reduction in retainage.

1.3 FINAL INSPECTION

A. Final Inspection – General:
1. Prior to requesting final inspection, verify that all the Work is fully complete and ready for final payment. Partial checklist for this purpose is attached to this Specifications section.
2. Sample letter for Contractor to request final inspection is attached to this Specifications section. Use the model language of the sample letter, modified to suit the Project.
3. Procedures for requesting and documenting the final inspection are in the General Conditions, as may be modified by the Supplementary Conditions, and as augmented in this Specifications section.

1.4 REQUEST FOR FINAL PAYMENT AND ACCEPTANCE OF THE WORK

A. Procedure:
1. After successful completion of the final inspection, submit request for final payment in accordance with the Agreement and General Conditions, as may be modified by the Supplementary Conditions, and using procedure specified in Section 01 29 76 - Progress Payment Procedures, and this Specifications section.
2. Acceptance of the Work:
   a. Upon Engineer’s concurrence that the Work is complete and ready for final payment (as a result of the final inspection and other communications between the parties and Engineer) and receipt of the final Application for Payment, accompanied by other required Contract closeout documentation, all in accordance with the Contract Documents, Engineer will issue to Owner and Contractor a notice of acceptability of the Work, in accordance with the General Conditions, as may be modified by the Supplementary Conditions.
   b. Unless decided otherwise by Owner and Engineer, form of acceptance will be EJCD C-626, “Notice of Acceptability of Work”, (2018 edition or later).
   c. Nothing other than receipt of such notice of acceptability from Engineer constitutes acceptance of the Work.
   d. Receipt of Engineer’s notice of acceptability of the Work does not relieve Contractor of Contractor’s continuing obligations under the Contract, including correction period obligations, warranty obligations, indemnification obligations, insurance requirements, and Contractor’s other obligations following acceptance of the Work by Engineer and final payment. Such obligations shall commence and remain in effect as indicated elsewhere in the Contract Documents.

B. Request for final payment shall include:
1. Documents required for progress payments.
2. Documents required in the General Conditions, as may be modified by the Supplementary Conditions.
3. List, on Contractor’s letterhead, of all Change Proposals, Claims, and disputes that Contractor believes are unsettled. If there are no such Change Proposals, Claims, or disputes, so indicate in writing.
4. Consent of Surety to Final Payment:
   a. Acceptable form includes AIA G707, “Consent of Surety to Final Payment” (1994 or later edition), or other form acceptable to Owner.
5. Releases of Liens:
   a. Submit complete and legally effective releases (satisfactory to Owner) of all Liens filed in connection with the Work, regardless of whether such Lien was filed by Contractor, Subcontractor, or Supplier.
   b. Each release of Lien shall be signed by an authorized representative of the entity submitting the release of Lien, and shall include Contractor’s, Subcontractor’s, or Supplier’s (as applicable) corporate seal, when applicable.
6. Waivers of Lien Rights:
   a. Submit legally-binding waivers of rights to file Liens, acceptable to Owner, as required in the General Conditions (as may be modified by the Supplementary Conditions) from Contractor and each Subcontractor and Supplier that furnished or provided labor, material, or equipment totaling $ or more for the Work.
b. Furnish final list of Subcontractors and Suppliers indicating final amount of the associated subcontract or purchase order for each. Include on the list all lower-tier Subcontractors and Suppliers retained by higher-tier Subcontractors and Suppliers.

c. Each waiver of Lien rights shall be signed by an authorized representative of the entity submitting waiver of Lien rights, and shall include Contractor’s, Subcontractor’s, or Supplier’s (as applicable) corporate seal, when applicable.

d. Waiver of Lien rights may be conditional upon receipt of final payment.

e. Required Affidavits: Submit the following:
   1) Affidavit of payment of debts and claims, submitted by Contractor. Acceptable form includes AIA G706, “Contractor’s Affidavit of Payment of Debts and Claims” (1994 or later edition), or other form acceptable to Owner, and;
   3) Each affidavit shall be signed by an authorized representative of Contractor and shall bear Contractor’s corporate seal, as applicable.

f. In the event Contractor is unable to obtain one or more required waivers of Lien rights, recourse is set forth in the General Conditions, as may be modified by the Supplementary Conditions.

PART 2 - PRODUCTS - (NOT USED)

PART 3 - EXECUTION

3.1 ATTACHMENTS

A. The documents listed below, following this Specification section’s “End of Section” designation, are part of this Specifications section:
   1. Sample letter for Contractor’s use in requesting inspection for Substantial Completion (two pages).
   2. Sample partial checklist to identify readiness for final inspection (four pages).
   3. Sample letter for Contractor’s use in requesting final inspection (one page).

B. In the model language of the attached sample letters for Contractor to request inspection for Substantial Completion and the final inspection, italicized language in brackets, e.g., “[insert date]” indicates instructions to the drafter of the letter and often indicates specific information to be inserted by Contractor; do not include bracketed, italicized text in the final version of the letter(s) prepared for the Project. Non-italicized language in brackets is optional language; use the appropriate language to complete the actual letter for the Project and edit where required to suit the specific circumstances.

END OF SECTION
SAMPLE LETTER FOR CONTRACTOR’S USE IN REQUESTING INSPECTION FOR SUBSTANTIAL COMPLETION

SENT VIA E-MAIL AND U.S. CERTIFIED MAIL/RETURN RECEIPT REQUESTED

[Date]

[Name of Engineer’s contact person]
HDR
[Street address]
[City, state, postal code]

Subject:
[Project name, Contract designation]
Request for Inspection for Substantial Completion

Dear [addressee]:

In our opinion, [all of] [or] [a portion of] the Work under the above-referenced Contract is substantially complete as of [insert month, day, year on which Substantial Completion was achieved]. [The specific portion of the Work that we believe is substantially complete is [insert identification of that portion of the Work that is substantially complete].]

Enclosed is our listing of uncompleted Work items (“punch list”). In accordance with Paragraph 15.03.A of the General Conditions, we hereby request: (1) That the Engineer schedule and perform the inspection for Substantial Completion as soon as possible, and (2) Issuance of the certificate of Substantial Completion.

In accordance with Paragraph 15.03.D of the General Conditions, upon Substantial Completion, we propose the following relative to apportionment of responsibilities between the Owner and the Contractor:

1. Security, Protection, Insurance:
   a. Site Security: [insert proposal; address whether Owner or Contractor will be responsible for security of the Site].
   b. Protection of the Substantially Completed Work: [insert proposal; address whether Owner or Contractor will be responsible for protection].
   c. Property Insurance: [insert proposal; typically Owner assumes responsibility for property insurance upon Substantial Completion]

2. Operation and Maintenance:
   a. Operation: [insert proposal; address whether Owner or Contractor will be responsible for operating the substantially completed Work].
   b. Maintenance: [insert proposal; address whether Owner or Contractor will be responsible for maintaining the substantially completed Work].

3. Utilities: [for each of the following, indicate whether Owner or Contractor will be responsible for utilities and services, or whether responsibility will be shared; if shared, indicate proposed cost-sharing]
   a. Electricity: [insert proposal].
   b. Natural Gas/Fuel/Heating: [insert proposal].
   c. Water Supply: [insert proposal].
d. Wastewater: [insert proposal].

e. Communications (Telephone, Internet, Video): [insert proposal].

In accordance with Paragraph 15.08.A of the General Conditions, we understand that the Contract’s correction period for the Work covered by the certificate of Substantial Completion commences on the Substantial Completion date documented in said certificate. [Drafter: Also see Paragraph 15.04 (“Partial Utilization”) of the General Conditions and, where necessary, edit this paragraph of the letter accordingly.]

Should you have questions or comments regarding this notice, please contact [the undersigned] [or] [insert other contact person’s name], at [insert telephone number and e-mail address].

Sincerely,

[Contractor’s company name]

[Signatory name]
[Signatory’s title]

Attachments:
Preliminary list of uncompleted Work items (“punch list”; [#] pages)

Copies:
[Owner’s project manager]
## SAMPLE PARTIAL CHECKLIST TO IDENTIFY READINESS FOR FINAL INSPECTION

<table>
<thead>
<tr>
<th>Item No./Description</th>
<th>Completed/Date</th>
<th>In Progress</th>
<th>Not Started</th>
<th>Not Applicable</th>
<th>Target Date</th>
<th>Responsible Entity/Person</th>
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</thead>
<tbody>
<tr>
<td>1. All Submittals, including all Shop Drawings and Samples, approved or accepted by Engineer</td>
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**Remarks:**

1. Final services completed by Suppliers, including submittal of “Manufacturer Field Service Report” in Section 01 61 03 Equipment - Basic Requirements

**Remarks:**

2. Final Work completed by Subcontractors

**Remarks:**

3. Permits closed out and regulatory compliance transitioned from construction to operations

**Remarks:**

4. All outstanding change issues are addressed and all Change Proposals submitted

**Remarks:**

5. All Change Proposals and Claims are resolved
<table>
<thead>
<tr>
<th>Item No./Description</th>
<th>Completed/Date</th>
<th>In Progress</th>
<th>Not Started</th>
<th>Not Applicable</th>
<th>Target Date</th>
<th>Responsible Entity/Person</th>
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<tbody>
<tr>
<td>6. All defective Work of which Contractor is aware has been corrected in accordance with the Contract Documents</td>
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<td>7. Issues related to Constituents of Concern and potential Hazardous Environmental Condition have been fully addressed</td>
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<td>8. All spare parts, tools, and extra materials have been furnished in accordance with the Contract Documents, and documentation thereof submitted to Engineer</td>
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<td>9. All final operations &amp; maintenance manuals have been submitted and accepted by Engineer</td>
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<td>10. Manufacturer warranties and software license(s) furnished</td>
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<td>11. Instruction and training of operations and maintenance personnel is complete and records of training submitted</td>
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<td>Item No./Description</td>
<td>Completed/Date</td>
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<td>Target Date</td>
<td>Responsible Entity/Person</td>
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<td>12. MBE/WBE/DBE/VBE compliance report(s) submitted (when applicable)</td>
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<td>13. All field engineering Submittals, including survey data, furnished</td>
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<td>14. All Work on “punch list” is complete in accordance with the Contract Documents</td>
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<td>15. All record documents submitted to and accepted by Engineer</td>
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<td>16. Contractor is fully demobilized from the Site</td>
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<td>17. All Site restoration is complete</td>
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<td>18. Final cleaning of all work areas is complete</td>
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<td>19. Releases of Liens and waivers of Lien rights (or acceptable)</td>
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<td>Item No./Description</td>
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<td>alternative) obtained from Subcontractors and Suppliers</td>
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</table>

Remarks:

20. Evidence of Contractor liability insurance furnished for correction period

Remarks:

21. All other required Contract closeout documents obtained

Remarks:

Remarks:

22. All other Work and documentation required prior to final payment is complete and provided in accordance with the Contract Documents

Remarks:
SAMPLE LETTER FOR CONTRACTOR’S USE IN REQUESTING FINAL INSPECTION

SENT VIA E-MAIL AND U.S. CERTIFIED MAIL/RETURN RECEIPT REQUESTED

[Date]

[Name of Engineer’s contact person]
HDR
[Street address]
[City, state, postal code]

Subject:
[Project name, Contract designation]
Request for Final Inspection

Dear [addressee]:

The Work under the above-referenced Contract is complete and ready for final payment as of [insert month, day, year on which final completion was achieved]. In accordance with Paragraph 15.05 of the General Conditions, we hereby request that the Engineer schedule and perform the final inspection as soon as possible. Upon successful completion of the final inspection, we will submit our final Application for Payment accompanied by the required Contract closeout documentation in accordance with the Contract Documents.

Should you have questions or comments regarding this notice, please contact [the undersigned] [or] [insert other contact person’s name], at [insert telephone number and e-mail address].

Sincerely,

[Contractor’s company name]

[Signatory name]
[Signatory’s title]

Attachments:
None

Copies:
[Owner’s project manager]
DIVISION 02
EXISTING CONDITIONS
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PART 1 - GENERAL

1.1 SUMMARY
A. Section Includes:
   1. General provisions applicable to all demolition and removals.
   2. Mechanical demolition and removals
   3. Electrical demolition and removals
   4. Disposal of demolition debris, materials, and equipment.

B. Scope:
   1. Contractor shall provide all labor, materials, equipment, tools, and incidentals as shown, specified and required for demolition, removals, and disposal Work.
   2. The Work under this Specifications section includes, but is not necessarily limited to:
      a. Demolition and removal of existing materials and equipment as shown or indicated in the Contract Documents. The Work includes demolition of electrical and mechanical systems and equipment.
   3. Demolitions and removals indicated in other Specifications sections shall comply with requirements of this Specifications section.
   4. Perform demolition Work within areas shown or indicated.
   5. Pay all costs associated with transporting and, as applicable, disposing of materials and equipment resulting from demolition and removals Work.

1.2 QUALITY ASSURANCE
A. Referenced Standards:
   1. National Fire Protection Association (NFPA):
      a. 241, Safeguarding Construction, Alteration, and Demolition Operations.

B. Regulatory Requirements:
   1. Demolition, removals, and disposal Work shall be in accordance with 29 CFR 1926.850 through 29 CFR 1926.860 (Subpart T – Demolition), and all other Laws and Regulations.
   2. Comply with requirements of authorities having jurisdiction.

C. Qualifications:
   1. Electrical Removals: Entity and personnel performing electrical removals shall be electrician(s) legally qualified to perform electrical construction and electrical work in the jurisdiction where the Site is located.
   2. Plumbing Removals: Entity and personnel performing plumbing removals shall be plumber(s) legally qualified to perform plumbing construction and plumbing work in the jurisdiction where the Site is located.

1.3 ADMINISTRATIVE REQUIREMENTS
A. Coordination:
   1. Comply with Section 01 11 00 - Summary of Work, Subsection 1.6 for coordination of the sequence of work related to demolition.
   2. Review procedures under this and other Specifications sections and coordinate the Work that will be performed with or before demolition and removals.

1.4 SUBMITTALS
A. Informational Submittals: Submit the following:
   1. Procedure Submittals:
      a. Demolition and Removal Plan: Not less than ten days prior to starting demolition Work, submit acceptable plan for demolition and removal Work, including:
1) Plan for coordinating shut-offs, capping, temporary services, and continuing utility services.
2) Other proposed procedures as applicable.
3) Equipment proposed for use in demolition operations.
4) Recycling/disposal facility(ies) proposed, including facility owner, facility name, location, and processes. Include copy of appropriate permits and licenses, and compliance status.
5) Planned demolition operating sequences.
6) Detailed schedule of demolition Work in accordance with the Schedule accepted by Engineer.

2. Notification of Intended Demolition Start: Submit in accordance with Paragraph 3.1.A of this Specifications Section.

3. Field Quality Control Test Results:
   a. Results of megger-testing of existing motors to remain Owner’s property.

4. Qualifications Statements:
   a. Name and qualifications of entity performing electrical removals, including copy of licenses required by authorities having jurisdiction.
   b. Name and qualifications of entity performing plumbing removals,

1.5 SITE CONDITIONS

A. Owner makes no representation of condition or structural integrity of area(s) to be demolished or where removals are required by the Contract Documents.

PART 2 - PRODUCTS - (NOT USED)

PART 3 - EXECUTION

3.1 PREPARATION

A. Notification:
   1. Not less than 48 HRS prior to commencing demolition or removal, advise Engineer in writing of planned start of demolition Work. Do not start removals without permission of Engineer.
   2. Where demolition or removals has potential to affect adjacent properties, occupants, streets, or other public thoroughfare, transportation facilities, and utilities, furnish required notices to owners and occupants of properties, buildings, and structures that may be affected by the demolition of removal.
   3. In accordance with Laws and Regulations, furnish to authorities having jurisdiction, including emergency services as necessary, appropriate notices of planned demolition and removals.
   4. Submit to Engineer copies of notices furnished to adjacent property owners, occupants, and authorities having jurisdiction.

B. Protection of Adjacent Areas and Facilities:
   1. Perform demolition and removal Work in manner that prevents damage and injury to property, structures, occupants, the public, and facilities. Do not interfere with use of, and free and safe access to and from, structures and properties unless allowed by the Contract Documents otherwise allowed in writing by Owner.
   2. Closing or obstructing of roads, drives, sidewalks, and passageways adjacent to the Work is not allowed unless indicated otherwise in the Contract Documents. Conduct the Work with minimum interference to vehicular and pedestrian traffic.
   3. Provide temporary partitions between demolition work areas and (a) areas that will be occupied during demolition and removals, and (b) areas accessible to the public or visitors. Temporary partitions shall be sturdy, braced plywood in good condition, of dimensions sufficient to adequately screen demolition work from view of occupants, public, and
visitors. Maintain temporary partitions in place until demolition and removal work in the subject area is complete or until other Work requires removal of temporary partitions.

4. Provide appropriate temporary barriers, lighting, sidewalk sheds, and other necessary protection.

5. Repair damage to facilities that are to remain which such damages results from Contractor’s operations.

C. Existing Utilities: In addition to requirements of the General Conditions, Supplementary Conditions, and Division 01 Specifications, perform the following:

1. Should unforeseen, unknown, or incorrectly shown or indicated Underground Facilities be encountered, Contractor responsibilities shall be in accordance with the General Conditions as may be modified by the Supplementary Conditions. Cooperate with utility owners in keeping adjacent services and facilities in operation.

D. Remediation:

1. If unanticipated Hazardous Environmental Condition is believed to be encountered during demolition and removals, comply with requirements of the General Conditions, as may be modified by the Supplementary Conditions.

3.2 DEMOLITION - GENERAL

A. Locate construction equipment used for demolition Work and remove demolished materials and equipment to avoid imposing excessive loading on supporting and adjacent walls, floors, framing, facilities, and Underground Facilities.

B. Pollution Controls:

1. Use water sprinkling, temporary enclosures, and other suitable methods to limit emissions of dust and dirt to lowest practical level.

2. Do not use water when water may create hazardous or objectionable conditions such as icing, flooding, or pollution.

3. Clean adjacent structures, facilities, properties, and improvements of dust, dirt, and debris caused by demolition Work.

C. Explosives:

1. Explosives are not allowed at the Site. Do not use explosives for demolition and removal Work.

D. Salvage and Ownership:

1. Materials and equipment to remain Owner’s property shall be:

   a. Carefully removed and appropriately handled by Contractor to avoid damage and invalidation of warranties in effect. Brace motors attached to flexible mountings until reinstallation or delivery to Owner’s storage location. Fully remedy to pre-construction condition or replace items damaged during removal or handling by Contractor.

   b. Removed as functional units, together with all appurtenances required for operation.

   c. Cleaned, listed, and tagged for storage.

   d. Protected from damage.

   e. Delivered to designated storage location at the Site or other site indicated in the Contract Documents, at place designated by Engineer or Owner.

2. Items to be salvaged and delivered to Owner are as indicated in Table 02 41 00-A.

<table>
<thead>
<tr>
<th>Equipment Name/Designation</th>
<th>Equipment Location</th>
<th>Deliver to Owner’s Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>UV Bank 1 (M-8-2-1)</td>
<td>East Channel (Filter/UV Building)</td>
<td>To be determined</td>
</tr>
<tr>
<td>UV Bank 2 (M-8-2-2)</td>
<td>East Channel (Filter/UV Building)</td>
<td>To be determined</td>
</tr>
<tr>
<td>UV Bank 3 (M-8-2-3)</td>
<td>East Channel (Filter/UV Building)</td>
<td>To be determined</td>
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<tr>
<td>UV Low Water Sensor (LS-8-3)</td>
<td>East Channel (Filter/UV Building)</td>
<td>To be determined</td>
</tr>
</tbody>
</table>
3. Preparation of Owner’s existing equipment for storage:
   a. Where appropriate, identify each component with markings or tags to indicate its position in the assembly and the assembly of which it is part.
   b. Place small parts in appropriate, durable boxes and clearly mark contents on the outside of box or container.
   c. Remove oil from oil-lubricated bearings and gear boxes and replace with storage oil.
   d. Grease grease-lubricated bearings.
   e. Replace breather plugs with solid plugs.
   f. Megger-test motor windings: Attach report of the test results to the associated motor and submit copy to Engineer.
   g. Attach unit to suitable crate bottom.
   h. Enclose unit in polyethylene film and seal all seams and the film to the base of the unit with tape.
   i. Construct crate of wood slats around top and sides of unit.
   j. Attach permanent instruction tag to outside of crate stating “This unit has been prepared for storage. Replace oil, vent plugs, and lubricant in accordance with manufacturer’s instructions before start-up.”

E. Removal of Non-Salvageable Items:
1. Materials and items to be disposed of shall be:
   a. Carefully removed and appropriately handled by Contractor to avoid damage to surrounding equipment and surfaces to the maximum extent possible.
   b. Delivered to designated demolition waste area after confirmation that Owner has no further use for equipment.
   c. Includes, but is not limited to:
      1) 6” mud valve and operator extension, typical of two channels.

F. Finishing of Surfaces Exposed by Removals: Unless otherwise shown or indicated in the Contract Documents, surfaces of walls, floors, ceilings, and other areas exposed by removals, and that will remain as finished surfaces, shall be repaired and re-finished with materials that match existing adjacent surface, or as otherwise approved by Engineer.

3.3 MECHANICAL REMOVALS

A. Mechanical demolition and removal Work includes dismantling and removing existing:
1. Piping systems and ductwork systems.
2. Mechanical equipment and appurtenances.
3. Mechanical elements of instrumentation and control systems, such as sensors and transmitters and similar items.
4. Mechanical removals include cutting and capping as required; Specifications sections in which requirements for coordination with Owner’s operations are indicated; and applicable Specifications of Division 40 - Process Interconnections and others as applicable.
5. Mechanical removals as required herein apply to systems exposed to view, hidden from view, and Underground Facilities. Mechanical removals may require work in spaces that may be classified confined spaces.

B. Life-Safety Systems:
1. Retain existing life-safety systems, including but not limited to fire suppression systems, in place for as long as possible prior to performing associated demolition and removals.
2. Where demolishing buildings or structures equipped with life-safety systems, remove or deactivate life-safety systems only in the area where active demolition operations are in progress.

C. Demolition and Removals of Piping, Ductwork, and Similar Items:
1. Scope:
   a. To the extent shown or indicated, adequately fill existing UV channel drainage piping with high-strength grout such that the piping conveys no water..
D. Equipment Demolition and Removals:
1. To the extent shown or indicated and as required for the Work, remove existing mechanical equipment, including (but not limited to):
   a. UV disinfection system.
   b. Flow control gates and valves.
   c. Appurtenances (including motors, drive systems, controls, cooling water and seal water systems) as shown, indicated, and required for completion of the Work.
2. Where required, disassemble equipment to avoid imposing excessive loading on supporting walls, floors, framing, facilities, and Underground Facilities. Disassemble equipment as required for access through and egress from building or structure. Disassembly and removal shall comply with Laws and Regulations. Provide required means to remove equipment from building or structure.
3. Remove control panels, operator stations, and instruments associated with equipment being removed, unless shown or indicated otherwise.
4. Tanks and Equipment Containing Process Material:
   a. Purge contents in accordance with Paragraph 3.5.A of this Specifications Section and other requirements of the Contract Documents, as applicable.
   b. Where contents of tank or equipment item may pose a potential hazard, such as hydrocarbon fuels or chemicals, properly dispose of contents in accordance with Laws and Regulations and the Contract Documents.
   c. Where tank or equipment contains wastewater or liquid sludge, and the Site is a wastewater treatment facility, transport and dispose of stored contents onsite at location acceptable to Owner unless otherwise indicated in the Contract Documents.
   d. Where tank or equipment contains solid or slurry-type material, remove, handle, and transport the contents and appropriately dispose of the materials offsite in accordance with Laws and Regulations, unless otherwise indicated in the Contract Documents.
5. Remove equipment supports as applicable, anchorages, base, grout, and piping. Remove anchorage systems in accordance with the “Structural Removals” Article in this Specifications section.
6. Remove small-diameter piping back to header unless otherwise indicated.
7. Remove access platforms, ladders, and stairs related to equipment being removed, unless otherwise shown or indicated.
8. Instrumentation and Control Systems Removal:
   a. Remove instrumentation and controls equipment in accordance with this Specifications section’s requirements for mechanical removals and electrical removals.
9. Reuse and Sale of Removed Equipment:
   a. Comply with this Specifications section’s “Disposal of Demolition Debris” Article for restrictions on sales of removed items.
   b. Confirm with Owner prior to sale of removed equipment if any equipment shall be reused by Owner.

3.4 ELECTRICAL REMOVALS

A. Electrical removal Work includes removing existing:
1. Disconnecting cabling from motors, electrical sources, control panels, control stations, instrumentation and control items, and similar devices and equipment.
2. Conduits, raceways, cable trays, hangers and supports, cabling, and related items.
3. Switches, panelboards, control stations, and similar items.
4. Transformers, distribution switchboards, control panels, motors, starters, variable speed controllers, and similar items.
5. Appurtenances and miscellaneous electrical equipment, as shown, specified, or required.

B. Electrical Removals – General:
1. Comply with Laws and Regulations, including the National Electric Code.
2. Lock Out and Tagging:
a. Contractor shall lock out and tag circuit breakers and switches operated by Owner and shall verify that affected cabling are de-energized to ground potential before commencing electrical removals Work.
b. Upon completion of electrical removals Work, remove the locks and tags and promptly advise Resident Project Representative (RPR) or Engineer and Owner that existing facilities are available for use.

3. Remove existing electrical equipment, fixtures, and systems to avoid damaging systems to remain, to keep existing systems in operation, and to maintain integrity of grounding systems.

4. Disconnect and remove motors, control panels, and other electrical gear where shown or indicated.

5. Store removed motors, microprocessors and electronics, and other electrical gear to be reused in accordance with its manufacturer’s recommendations and requirements of the Contract Documents.

C. Motor Control Centers and Switchgear:
   1. Remove or modify motor control centers and switchgear as shown or indicated.
   2. Modified openings shall be cut square and dressed smooth to dimensions required for installation of equipment.

D. Removal of Cabling, Conduits, Raceways and Similar Items:
   1. Verify the function of each cable before disconnecting and removing.
   2. Remove cabling, conduits, hangers and supports, and similar items back to the power source or control panel, unless otherwise shown or indicated.
   3. Remove cabling, conduits, and similar items where shown or indicated for removal. Abandoned conduits concealed in floor, ceiling slabs, or in walls shall be cut flush with the slab or wall (as applicable) at point of entrance, suitably capped, and the area repaired in a flush, smooth manner acceptable to Engineer.
   4. Disassemble and remove exposed conduits, junction boxes, other electrical appurtenances, and their supports.
   5. Repair all areas of the Work to prevent rusting on exposed surfaces.
   6. Underground Electric:
      a. Conduits in Underground Facilities not scheduled for reuse shall be suitably capped watertight where each enters building or structure to remain.
      b. Where shown or indicated, remove direct-burial cabling. Openings in buildings for entrance of direct-burial cabling shall be patched with repair mortar or other material approved by Engineer for such purpose, and made watertight.

E. Electrical Service Entrances and Outdoor, Overhead Electrical Utilities:
   1. Existing overhead cabling shall be removed or abandoned as shown and specified.
   2. Completely remove from the Site poles not owned by electric utility, including site lighting standards and appurtenances, shown or indicated for removal.
   3. Existing substation(s) and poles owned by electric utility will be removed by the electric utility.
   4. Make necessary arrangements with electric utility owner for removal of utility owner’s transformers and metering equipment after new electrical system has been installed and energized.

F. Lighting fixtures, wall switches, receptacles, starters, and other miscellaneous electrical equipment, not designated as remaining as Owner’s property, shall be removed and properly disposed of off-Site as required in accordance with Laws and Regulations.

3.5 DEMOLITION OF SITE IMPROVEMENTS

A. Underground Facilities Other than Manholes, Vaults, Chambers, and Handholes:
   1. Remove to the extent shown or indicated on the Drawings.
   2. Unless otherwise shown or indicated, cap ends of piping to remain in place in accordance with the “Mechanical Removals” Article in this Specifications section.
B. Other Site Improvements: When the Contract Documents require removal of other site improvements not addressed above, copy with Contract requirements for removal of buildings or structures.

3.6 DISPOSAL OF DEMOLITION DEBRIS

A. Disposal – General:
   1. Promptly remove from the Site all debris, waste, rubbish, material, and equipment resulting from demolition and removal operations. Promptly upon completion of demolition and removal operations, remove from the Site construction equipment used in demolition Work.
   2. Do not sell at the Site demolition materials or removed equipment. If materials, equipment or debris will be sold by Contractor, remove the items from the Site and perform the sale or transaction elsewhere, in accordance with Laws and Regulations.
   3. Cleaning and Removal of Debris: Comply with the General Conditions and Supplementary Conditions.

B. Transportation and Disposal:
   1. Non-Hazardous Materials, Equipment, and Debris: Properly transport and dispose of non-hazardous demolition materials, equipment, and debris at appropriate landfill or other suitable location, in accordance with Laws and Regulations. Non-hazardous material does not contain Constituents of Concern such as (but not limited to) asbestos, PCBs, petroleum, hazardous waste, radioactive material, or other material designated as hazardous in Laws or Regulations.
   2. Hazardous Materials, Equipment, and Debris: When handling and disposal of items containing Constituents of Concern is included in the Work, properly transport and dispose of such items in accordance with the Contract Documents and Laws and Regulations.

C. Submit to Engineer information required in this Specification Section on proposed facility(ies) where demolition materials, equipment, and debris will be recycled. Upon request, Engineer or Owner, shall be allowed to visit recycling facility(ies) to verify adequacy and compliance status. During such visits, recycling facility operator shall cooperate and assist Engineer and Owner.

END OF SECTION
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SECTION 03 00 05
CONCRETE

PART 1 - GENERAL

1.1 SUMMARY
A. Section Includes:
B. Related Specification Sections include but are not necessarily limited to:

1.2 QUALITY ASSURANCE
A. Referenced Standards:
   1. American Concrete Institute (ACI):
      a. 117, Specification for Tolerances for Concrete Construction and Materials.
      b. 211.1, Standard Practice for Selecting Proportions for Normal, Heavyweight and Mass Concrete.
      c. 212.3R, Chemical Admixtures for Concrete.
      d. 304R, Guide for Measuring, Mixing, Transporting, and Placing Concrete.
      e. 304.2R, Placing Concrete by Pumping Methods.
      f. 305.1, Hot Weather Concreting.
      g. 306.1, Cold Weather Concreting.
      h. 318, Building Code Requirements for Structural Concrete.
      i. 347, Guide to Formwork for Concrete.
      j. CT-13, Concrete Terminology.
   2. ASTM International (ASTM):
      a. A82, Standard Specification for Steel Wire, Plain, for Concrete Reinforcement.
      c. A615, Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement.
      d. A1064, Standard Specification for Steel Wire and Welded Wire Replacement, Plain and Deformed, for Concrete.
      e. C31, Standard Practice for Making and Curing Concrete Test Specimens in the Field.
      i. C138, Standard Method of Test for Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete.
      l. C172, Standard Practice for Sampling Freshly Mixed Concrete.
      m. C173, Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method.
      n. C231, Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.
      r. C618, Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete.
s. C1293, Standard Test Method for Determination of Length Change of Concrete Due to Alkali-Silica Reaction.
v. D994, Standard Specification for Preformed Expansion Joint Filler for Concrete (Bituminous Type).

3. Corps of Engineers (COE):


5. National Sanitation Foundation (NSF):
a. 61, Drinking Water System Components - Health Effects.

B. Quality Control:
1. Concrete testing agency:
   a. Contractor to employ and pay for services of a testing laboratory to:
      1) Perform materials evaluation.
      2) Design concrete mixes.
   b. Concrete testing agency to meet requirements of ASTM E329.
2. Do not begin concrete production until proposed concrete mix design has been approved by Engineer.
   a. Approval of concrete mix design by Engineer does not relieve Contractor of his responsibility to provide concrete that meets the requirements of this Specification.
3. Adjust concrete mix designs when material characteristics, job conditions, weather, strength test results or other circumstances warrant.
   a. Do not use revised concrete mixes until submitted to and approved by Engineer.
4. Perform structural calculations as required to prove that all portions of the structure in combination with remaining forming and shoring system has sufficient strength to safely support its own weight plus the loads placed thereon.

C. Qualifications:
1. Ready mixed concrete batch plant certified by NRMCA.
2. Formwork, shoring and reshoring for slabs and beams except where cast on ground to be designed by a professional engineer currently registered in the state where the Project is located.

1.3 DEFINITIONS

A. Per ACI CT-13 except as modified herein:
2. Concrete Testing Agency: Testing agency employed to perform materials evaluation, design of concrete mixes or testing of concrete placed during construction.
3. Exposed concrete: Exposed to view after construction is complete.
5. Nonexposed concrete: Not exposed to view after construction is complete.
7. Specified strength: Specified compressive strength at 28 days.
8. Submitted: Submitted to Engineer.

1.4 SUBMITTALS

A. Shop Drawings:
   1. Concrete mix designs proposed for use.
      a. Concrete mix design submittal to include the following information:
         1) Sieve analysis and source of fine and coarse aggregates.
         2) Test for aggregate organic impurities.
         3) Test for deleterious aggregate per ASTM C1293.
         4) Proportioning of all materials.
         5) Type of cement with mill certificate for cement.
         6) Type of fly ash with certificate of conformance to specification requirements.
         7) Slump.
         8) Air content.
         9) Brand, type, ASTM designation, and quantity of each admixture proposed for use.
         10) 28-day cylinder compressive test results of trial mixes per ACI 318 and as indicated herein.
   2. Product technical data including:
      a. Acknowledgement that products submitted meet requirements of standards referenced.
      b. Manufacturer's installation instructions.
      c. Manufacturers and types:
         1) Joint fillers.
         2) Curing agents.
         3) Chemical sealer.
         4) Bonding and patching mortar.
         5) Construction joint bonding adhesive.
         6) Nonshrink grout with cure/seal compound.
   3. Reinforcing steel:
      a. Show grade, sizes, number, configuration, spacing, location and all fabrication and placement details.
      b. In sufficient detail to permit installation of reinforcing without having to make reference to Contract Drawings.
      c. Obtain approval of Shop Drawings by Engineer before fabrication.
      d. Mill certificates.
   4. Scaled (minimum 1/8 IN per foot) drawings showing proposed locations of construction joints, control joints, expansion joints (as applicable) and joint dimensions.
   5. Strength test results of in place concrete including slump, air content and concrete temperature.
   6. Certifications:
      a. Certification of standard deviation value in psi for ready mix plant supplying the concrete.
      b. Certification that the material and sources submitted in the mix design will be used in the concrete for this project.
   7. Test reports:
      a. Cement mill reports for all cement to be supplied.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Storage of Material:
   1. Cement and pozzolan:
      a. Store in moistureproof, weathertight enclosures.
      b. Do not use if caked or lumpy.
   2. Aggregate:
      a. Store to prevent segregation and contamination with other sizes or foreign materials.
      b. Obtain samples for testing from aggregates at point of batching.
      c. Do not use frozen or partially frozen aggregates.
d. Do not use bottom 6 IN of stockpiles in contact with ground.

e. Allow sand to drain until moisture content is uniform prior to use.

3. Admixtures:
   a. Protect from contamination, evaporation, freezing, or damage.
   b. Maintain within temperature range recommended by manufacturer.
   c. Completely mix solutions and suspensions prior to use.

4. Reinforcing steel: Support and store all rebars above ground.

B. Delivery:
   1. Concrete:
      a. Prepare a delivery ticket for each load for ready-mixed concrete.
      b. Truck operator shall hand ticket to Owner’s Representative at the time of delivery.
      c. Ticket to show:
         1) Mix identification mark.
         2) Quantity delivered.
         3) Amount of each material in batch.
         4) Outdoor temp in the shade.
         5) Time at which cement was added.
         6) Numerical sequence of the delivery.
         7) Amount of water added.
   2. Reinforcing steel:
      a. Ship to jobsite with attached plastic or metal tags with permanent mark numbers.
      b. Mark numbers to match Shop Drawing mark number.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Subject to compliance with the Contract Documents, the following products and manufacturers are acceptable:

1. Nonshrink, nonmetallic grout:
   a. Sika "SikaGrout 212."
   b. Euclid Chemial "NS Grout."
   c. Master Builders Solutions "Masterflow 713."

2. Expansion joint fillers:
   a. Permaglaze Co.
   b. Rubatex Corp.
   c. Williams Products, Inc.

3. Form coating:
   a. Richmond "Rich Cote."
   b. Industrial Lubricants "Nox-Crete Form Coating."
   c. Euclid Chemical "Kurez DR VOX."

4. Cementitious concrete coating:
   a. Aquafin International.
   b. Master Builders Solutions.
   c. Euclid Chemical Company.

5. Chemical sealer:
   a. L&M Construction Chemicals, Inc.
   b. Euclid Chemical Company.
   c. Dayton Superior.

2.2 MATERIALS

A. Portland Cement: Conform to ASTM Type IIA.

B. Fly Ash:
   1. ASTM C618, Class F or Class C.
   2. Nonstaining.
a. Hardened concrete containing fly ash to be uniform light gray color.
3. Maximum loss on ignition: 46%.
4. Compatible with other concrete ingredients.
5. Obtain proposed fly ash from a source approved by the State Highway Department in the state where the Project is located for use in concrete for bridges.

C. Admixtures:
2. Water reducing, retarding, and accelerating admixtures:
   a. ASTM C494 Type A through E.
   b. Conform to provisions of ACI 212.3R.
   c. Do not use retarding or accelerating admixtures unless specifically approved in writing by Engineer and at no cost to Owner.
   d. Follow manufacturer's instructions.
   e. Use chloride free admixtures only.
3. Maximum total water soluble chloride ion content contributed from all ingredients of concrete including water, aggregates, cementitious materials and admixtures by weight percent of cement:
   a. 0.10 all concrete.
4. Do not use calcium chloride.
5. Pozzolanic admixtures: ASTM C618.
6. Provide admixtures of same type, manufacturer and quantity as used in establishing required concrete proportions in the mix design.

D. Water: Potable, clean, free of oils, acids and organic matter.

E. Aggregates:
1. Normal weight concrete: ASTM C33, except as modified below.
2. Fine aggregate:
   a. Clean natural sand.
   b. No manufactured or artificial sand.
3. Coarse aggregate:
   a. Crushed rock, natural gravel, or other inert granular material.
   b. Maximum amount of clay or shale particles: 1%.
4. Gradation of coarse aggregate:
   b. All other concrete: Size #57 or #67.

F. Concrete Grout:
1. Nonshrink, nonmetallic grout:
   a. Nonmetallic, noncorrosive, nonstaining, premixed with only water to be added.
   b. Grout to produce a positive but controlled expansion.
   c. Mass expansion not to be created by gas liberation.
   d. Minimum compressive strength of nonshrink grout at 28 days: 6500 PSI.
   e. In accordance with COE CRD-C621.

G. Reinforcing Steel:
1. Reinforcing bars: ASTM A615, Grade 60.
2. Welded wire reinforcement:
   a. ASTM A185 or ASTM A1064.
   b. Minimum yield strength: 60,000 PSI.

H. Forms:
1. Prefabricated or job built.
2. Wood forms:
   a. 5/8 or 3/4 IN 5-ply structural plywood of concrete form grade.
   b. Built-in-place or prefabricated type panel.
3. **Metal forms:**
   a. Metal forms may be used except for aluminum in contact with concrete.
   b. Forms to be tight to prevent leakage, free of rust and straight without dents to provide members of uniform thickness.

4. **Chamfer strips:** Clear white pine, surface against concrete planed.

I. **Form Ties:**
      a. Field fabricated ties are unacceptable.
   2. Constructed so that ends or end fasteners can be removed without causing spalling at surfaces of the concrete.
   3. 3/4 IN minimum diameter cones on both ends.
   4. Embedded portion of ties to be not less than 1-1/2 IN from face of concrete after ends have been removed.
   5. **Cone size:**
      a. 3/4 IN minimum diameter cones on both ends.
      b. Depth of cone not to exceed the concrete reinforcing cover.
   6. **Form release:** Nonstaining and shall not prevent bonding of future finishes to concrete surface.

J. **Chairs, Runners, Bolsters, Spacers, and Hangers:**
   1. Stainless steel, epoxy coated, or plastic coated metal.
      a. Plastic coated: Rebar support tips in contact with the forms only.

K. **Chemical Floor Sealer:**
   1. Colorless low VOC water-based solution containing acrylic copolymers.
      a. ASTM C1315, Class B, minimum 30% solids.

L. **Cementitious Concrete Coating:**
   1. Polymer modified Portland cement based coating for concrete and masonry.
      a. Waterproof.
      b. Resistant to both positive and negative hydrostatic pressure.
      c. Breathable.
   2. Master Builders Solutions “Masterseal 581 Thoroseal”.
      a. **Color:**
         1) Interior surfaces: Standard gray.
         2) Exterior surfaces: Custom color to match concrete surface.
         3) Texture: Fine.

M. **Membrane Curing Compound:**
   1. ASTM C309, Type 1D, Class A or B.
   2. Fugitive dye shall dissipate over time and exposure.
   3. Curing compound shall not prevent bonding of any future coverings, coatings or finishes.

N. **Bonding Agent:**
   1. High solids acrylic latex base liquid for interior or exterior application as a bonding agent to improve adhesion and mechanical properties of concrete patching mortars.
   2. Euclid Chemical Co. "Flex-Con."
   3. Master Builders Solutions "Acryl-Set."
   4. L&M Construction Chemicals "Everbond."

O. **Expansion Joint Filler:**
   1. In contact with water or sewage:
      a. Closed cell neoprene.
      b. ASTM D1056, Class SC (oil resistant and medium swell) of 2 to 5 PSI compression deflection (Grade SCE41).
   2. Exterior driveways, curbs and sidewalks:
      a. Asphalt expansion joint filler.
b. ASTM D994.
3. Other use:
   a. Fiber expansion joint filler.
   b. ASTM D1751.

2.3 CONCRETE MIXES

A. General:
   1. All concrete to be ready mixed concrete conforming to ASTM C94/C94M.
   2. Provide concrete of specified quality capable of being placed without segregation and, when
cured, of developing all properties required.
   3. All concrete to be normal weight concrete
   4. Provide pozzolan content for all cast-in-place construction.

B. Strength:
   1. Provide specified strength and type of concrete for each use in structure(s) as follows:

<table>
<thead>
<tr>
<th>TYPE</th>
<th>WEIGHT</th>
<th>SPECIFIED STRENGTH*</th>
</tr>
</thead>
<tbody>
<tr>
<td>All other general use concrete</td>
<td>Normal weight</td>
<td>4000 PSI</td>
</tr>
</tbody>
</table>

* Minimum 28-day compressive strength.

C. Air Entrainment:
   1. Provide air entrainment in all concrete resulting in a total air content percent by volume as
follows:

<table>
<thead>
<tr>
<th>MAX AGGREGATE SIZE</th>
<th>TOTAL AIR CONTENT PERCENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 IN or 3/4 IN</td>
<td>6 ±1-1/2</td>
</tr>
<tr>
<td>&lt;3/4 IN</td>
<td>6-1/2 ±1-1/2</td>
</tr>
</tbody>
</table>

2. Air content to be measured in accordance with ASTM C231, ASTM C173, or ASTM C138.

D. Slump - 4 IN maximum, 1 IN minimum:
   1. Measured at point of discharge of the concrete into the concrete construction member.
   2. 8 IN maximum after addition of superplasticizer (if used).
   3. Concrete of lower than minimum slump may be used provided it can be properly placed and
consolidated.
   4. Pumped concrete:
      a. Provide additional water at batch plant to allow for slump loss due to pumping.
      b. Provide only enough additional water so that slump of concrete at discharge end of
pump hose does not exceed maximum slump specified and the maximum specified
water-cement ratio is not exceeded.
   5. Slump may be adjusted in the field through the use of water reducers.
      a. Coordinate dosage and mixing requirements with concrete supplier.
   6. Determine slump per ASTM C143.

E. Selection of Proportions:
   1. General:
      a. Proportion ingredients to:
         1) Produce proper workability, durability, strength, and other required properties.
         2) Prevent segregation and collection of excessive free water on surface.
   2. Minimum cement contents and maximum water-cement ratios for concrete to be as follows:

<table>
<thead>
<tr>
<th>SPECIFIED STRENGTH</th>
<th>TARGET CEMENT, MAXIMUM AGGREGATE SIZE</th>
</tr>
</thead>
</table>
3. Fly ash:
   a. For cast-in-place concrete only, a maximum of 25% by weight of Portland cement content per cubic yard may be replaced with fly ash at a rate of 1 LB fly ash for 1 LB of cement.
   b. When fly ash is used, the water to cementitious materials ratio shall not exceed the maximum value specified herein.

4. Concrete mix proportioning methods for normal weight concrete:
   a. Proportion mixture to provide desired characteristics using one of methods described below:
      1) Method 1 (Trial Mix):
         a) Per ACI 318, Chapter 5, except as modified herein.
         b) Air content within range specified above.
         c) Record and report temperature of trial mixes.
         d) Proportion trial mixes per ACI 211.1.
      2) Method 2 (Field Experience):
         a) Per ACI 318, Chapter 5, except as modified herein:
         b) Field test records must be acceptable to Engineer to use this method.
         c) Test records shall represent materials, proportions and conditions similar to those specified.

5. Required average strength to exceed the specified 28-day compressive strength by the amount determined or calculated in accordance with the requirements of Chapter 5 of ACI 318 using the standard deviation of the proposed concrete production facility.

PART 3 - EXECUTION

3.1 FORMING AND PLACING CONCRETE

A. Formwork:
   1. Contractor is responsible for design and erection of formwork.
   2. Construct formwork so that concrete members and structures are of correct size, shape, alignment, elevation and position.
      a. Allowable tolerances: As recommended in ACI 347.
   3. Provide slabs and beams of minimum indicated depth when sloping foundation base slabs or elevated floor slabs to drains.
      a. For slabs on grade, slope top of subgrade to provide floor slabs of minimum uniform indicated depth.
      b. Do not place floor drains through beams.
   4. Openings:
      a. Provide openings in formwork to accommodate work of other trades.
      b. Accurately place and securely support items built into forms.
   5. Chamfer strips: Place 3/4 IN chamfer strips in forms to produce 3/4 IN wide beveled edges on permanently exposed corners of members.
   6. Clean and adjust forms prior to concrete placement.
   7. Tighten forms to prevent mortar leakage.
   8. Coat form surfaces with form release agents prior to placing reinforcing bars in forms.

B. Reinforcement:
   1. Position, support and secure reinforcement against displacement.
   2. Locate and support with chairs, runners, bolsters, spacers and hangers, as required.
   3. Set wire ties so ends do not touch forms and are directed into concrete, not toward exposed concrete surfaces.
4. Lap splice lengths: ACI 318 Class B top bar tension splices unless indicated otherwise on the Drawings.
5. Extend reinforcement to within 2 IN of concrete perimeter edges.
   a. If perimeter edge is earth formed, extend reinforcement to within 3 IN of the edge.
6. Minimum concrete protective covering for reinforcement: As shown on Drawings.
7. Do not weld reinforcing bars.
8. Welded wire reinforcement:
   a. Install welded wire reinforcement in maximum practical sizes.
   b. Splice sides and ends with a splice lap length measured between outermost cross wires of each fabric sheet not less than:
      1) One spacing of cross wires plus 2 IN.
      2) 1.5 x development length.
      3) 6 IN.
   c. Development length: ACI 318 basic development length for the specified fabric yield strength.

C. Construction, Expansion, and Contraction Joints:
1. Locate joints as indicated on Contract Drawings or as shown on approved Shop Drawings.
   a. Where construction joint spacing shown on Drawings exceeds the joint spacing indicated in Paragraph below, submit proposed construction joint location in conformance with this Specification Section.
2. Unplanned construction joints will not be allowed.
3. Locate wall vertical construction joints at 30 FT maximum.
4. Locate construction joints in floor slabs and foundation base slabs so that concrete placements are approximately square and do not exceed 2500 SQFT.
5. Locate construction joints in columns and walls:
   a. At the underside of beams, girders, haunches, drop panels, column capitals, and at floor panels.
   b. Haunches, drop panels, and column capitals are considered part of the supported floor or roof and shall be placed monolithically therewith.
   c. Column based need not be placed monolithically with the floor below.
6. Install construction joints perpendicular to main reinforcement with all reinforcement continued across construction joints.
7. At least 72 HRS shall elapse between placing of adjoining concrete construction.
8. Thoroughly clean and remove all laitance and loose and foreign particles from construction joints.

D. Embedments:
1. Set and build in anchorage devices and other embedded items required for other work that is attached to, or supported by concrete.
2. Use setting diagrams, templates and instructions for locating and setting.

E. Placing Concrete:
1. Place concrete in compliance with ACI 304R and ACI 304.2R.
2. Place in a continuous operation within planned joints or sections.
3. Begin placement when work of other trades affecting concrete is completed.
4. Place concrete by methods which prevent aggregate segregation.
5. Do not allow concrete to free fall more than 4 FT.
6. Where free fall of concrete will exceed 4 FT, place concrete by means of tremie pipe or chute.

F. Consolidation: Consolidate all concrete using mechanical vibrators supplemented with hand rodding and tamping, so that concrete is worked around reinforcement and embedded items into all parts of forms.

G. Protection:
1. Protect concrete from physical damage or reduced strength due to weather extremes.
2. In cold weather comply with ACI 306.1 except as modified herein.
   a. Do not place concrete on frozen ground or in contact with forms or reinforcing bars coated with frost, ice or snow.
   b. Do not place heated concrete that is warmer than 80 DEGF.
   c. If freezing temperatures are expected during curing, maintain the concrete temperature at or above 50 DEGF for seven days or 70 DEGF for 3 days.
   d. Do not allow concrete to cool suddenly.
3. In hot weather comply with ACI 305.1 except as modified herein.
   a. At air temperature of 90 DEGF and above, keep concrete as cool as possible during placement and curing.
   b. Do not allow concrete temperature to exceed 90 DEGF at placement.
   c. Prevent plastic shrinkage cracking due to rapid evaporation of moisture.
   d. Do not place concrete when the actual or anticipated evaporation rate equals or exceeds 0.2 LBS/SF/HR as determined from ACI 305.1, Figure 2.1.5.

H. Curing:
   1. Begin curing concrete as soon as free water has disappeared from exposed surfaces.
   2. Cure concrete by use of moisture retaining cover, burlap kept continuously wet or by membrane curing compound.
   3. Provide protection as required to prevent damage to concrete and to prevent moisture loss from concrete during curing period.
   4. Provide curing for minimum of 14 days.
   5. Form materials left in place may be considered as curing materials for surfaces in contact with the form materials except in periods of hot weather.
   6. In hot weather follow curing procedures outlined in ACI 305.1.
   8. Curing vertical surfaces with a curing compound:
      a. Cover vertical surfaces with a minimum of two coats of the curing compound.
      b. Allow the preceding coat to completely dry prior to applying the next coat.
      c. Apply the first coat of curing compound immediately after form removal.
      d. Vertical surface at the time of receiving the first coat shall be damp with no free water on the surface.
      e. A vertical surface is defined as any surface steeper than 1 vertical to 4 horizontal.

I. Form Removal:
   1. Remove forms after concrete has hardened sufficiently to resist damage from removal operations or lack of support.
   2. Where no reshoring is planned, leave forms and shoring used to support concrete until it has reached its specified 28-day compressive strength.

3.2 CONCRETE FINISHES

A. Tolerances:
   1. Class A: 1/8 IN in 10 FT.
   2. Class B: 1/4 IN in 10 FT.

B. Surfaces Exposed to View:
   1. Provide a smooth finish for exposed concrete surfaces and surfaces that are:
      a. To be covered with a coating or covering material applied directly to concrete.
      b. Scheduled for grout cleaned finish.
   2. Remove fins and projections, and patch voids, air pockets, and honeycomb areas with cement grout.
   3. Cementitious concrete coating:
      a. Form facing material shall produce a smooth, hard, uniform texture.
      1) Use forms specified for surfaces exposed to view.
      b. Prepare the surface in accordance with manufactures printed installation instructions.
c. Brush on coating to entire surface.
   1) As a mixing liquid for the coating, use bonding agent and water mixture as
      recommended by the manufacture.
   2) Apply two (2) coats at 2 LB/SQYD per coat.
d. When second coat is set, float to a uniform texture with a sponge coat.
e. Provide this finish at the following locations:
   1) Walls, columns, exposed to view.

C. Surfaces Not Exposed to View:
   1. Patch voids, air pockets and honeycomb areas with cement grout.
   2. Fill tie holes with nonshrink, nonmetallic grout.

D. Slab Float Finish:
   1. After concrete has been placed, consolidated, struck off, and leveled, do no further work
      until ready for floating.
   2. Do not use water to aid in finishing.
   3. Begin floating when water sheen has disappeared and surface has stiffened sufficiently to
      permit operation.
   4. During or after first floating, check planeness of entire surface with a 10 FT straightedge
      applied at not less than two different angles.
   5. Cut down all high spots and fill all low spots during this procedure to produce a surface
      within Class B tolerance throughout.
   6. Refloat slab immediately to a uniform sandy texture.

E. Troweled Finish:
   1. Float finish surface.
   2. Next power trowel, and finally hand trowel.
   3. Do not use water to aid in finishing.
   4. Produce a smooth surface which is relatively free of defects with first hand troweling.
   5. Perform additional trowelings by hand after surface has hardened sufficiently.
   6. Final trowel when a ringing sound is produced as trowel is moved over surface.
   7. Thoroughly consolidate surface by hand troweling.
   8. Leave finished surface essentially free of trowel marks, uniform in texture and appearance
      and plane to a Class A tolerance.
   9. On surfaces intended to support floor coverings remove any defects of sufficient magnitude
      that would show through floor covering by grinding.

F. Broom Finish: Immediately after concrete has received a float finish as specified, give it a
   transverse scored texture by drawing a broom across surface.

3.3 GROUT

A. Preparation:
   1. Nonshrinking, nonmetallic grout:
      a. Clean concrete surface to receive grout.
      b. Saturate concrete with water for 24 HRS prior to grouting.

B. Application:
   1. Nonshrinking, nonmetallic grout:
      a. Mix in a mechanical mixer.
      b. Use no more water than necessary to produce flowable grout.
      c. Place in accordance with manufacturer’s instructions.
      d. Completely fill all spaces and cavities below the bottom of baseplates.
      e. Provide forms where baseplates and bedplates do not confine grout.
      f. Where exposed to view, finish grout edges smooth.
      g. Except where a slope is indicated on Drawings, finish edges flush at the baseplate,
         bedplate, member, or piece of equipment.
      h. Protect against rapid moisture loss by covering with wet rags or polyethylene sheets.
      i. Wet cure grout for seven days, minimum.
3.4 FIELD QUALITY CONTROL

A. Owner will employ and pay for services of a concrete testing laboratory to perform testing of concrete placed during construction.
1. Contractor to cooperate with Owner in obtaining and testing samples.

B. Tests During Construction:
1. Strength test:
   a. For each strength test, mold and cure cylinders from each sample in accordance with ASTM C31.
      1) Cylinder size: Per ASTM C31.
         a) 4 IN cylinders may not be used for concrete mixes with concrete aggregate size larger than 1 IN.
      2) Quantity:
         a) 6 IN DIA by 12 IN high: Four cylinders.
         b) 4 IN DIA by 8 IN high: Six cylinders.
   b. Field cure one (1) cylinder for the seven day test.
      1) Laboratory cure the remaining.
   c. Test cylinders in accordance with ASTM C39.
      1) 6 IN DIA cylinders:
         a) Test two cylinders at 28 days for strength test result and the one field cured sample at seven days for information.
         b) Hold remaining cylinder in reserve.
      2) 4 IN DIA cylinders:
         a) Test three cylinders at 28 days for strength test result and the one field cured cylinder at seven days for information.
         b) Hold remaining cylinders in reserve.
   d. Strength test result:
      1) Average of strengths of two 6 IN DIA cylinders or three 4 IN DIA cylinders from the same sample tested at 28 days.
      2) If one cylinder in a test manifests evidence of improper sampling, molding, handling, curing, or testing, discard and test reserve cylinder(s); average strength of remaining cylinders shall be considered strength test result.
      3) Should all cylinders in any test show any of above defects, discard entire test.
   e. Frequency of tests:
      a) One strength test to be taken not less than once a day, nor less than once for each 60 CUYD or fraction thereof placed in any one day.
      b) Once for each 5000 SQFT of slab or wall surface area placed each day.
      c) If total volume of concrete on Project is such that frequency of testing required in above paragraph will provide less than five strength tests for each concrete mix, tests shall then be made from at least five randomly selected batches or from each batch if fewer than five batches are provided.

2. Slump test:
   a. Per ASTM C143.
   b. Determined for each strength test sample.
   c. Additional slump tests may be taken.

3. Air content:
   b. Determined for each strength test sample.

4. Temperature: Determined for each strength test sample.

C. Evaluation of Tests:
1. Strength test results:
   a. Average of 28-day strength of two cylinders from each sample.
      1) If one cylinder manifests evidence of improper sampling, molding, handling, curing or testing, strength of remaining cylinder will be test result.
      2) If both cylinders show any of above defects, test will be discarded.
D. Acceptance of Concrete:
   1. Strength level of each type of concrete shall be considered satisfactory if both of the following requirements are met:
      a. Average of all sets of three consecutive strength tests equals or exceeds the required specified 28-day compressive strength.
      b. No individual strength test falls below the required specified 28-day compressive strength by more than 500 PSI.
   2. If tests fail to indicate satisfactory strength level, perform additional tests and/or corrective measures as directed by Engineer.
      a. Perform additional tests and/or corrective measures at no additional cost to Owner.

E. Concrete tolerances per ACI 117.

3.5 SCHEDULES

A. Form Types:
   1. Surfaces exposed to view:
      a. Prefabricated or job-built wood forms.
      b. Laid out in a regular and uniform pattern with long dimensions vertical and joints aligned.
      c. Produce finished surfaces free from offsets, ridges, waves, and concave or convex areas.
      d. Construct forms sufficiently tight to prevent leakage of mortar.
   2. Surfaces normally submerged or not normally exposed to view: Wood or steel forms sufficiently tight to prevent leakage of mortar.
   3. Other types of forms may be used:
      a. For surfaces not restricted to plywood or lined forms.
      b. As backing for form lining.

B. Grout:
   1. Nonshrinking, nonmetallic grout: General use.

C. Concrete:
   2. General use concrete: All other locations.

D. Concrete Finishes:
   1. Slab finishes:
      a. Use following finishes as applicable, unless otherwise indicated:
         1) Floated finish: Surfaces intended to receive roofing, concrete topping, lean concrete, concrete fill and waterproofing.
         2) Troweled finish: Interior floor slabs, exposed roof slabs and base slabs of structures, equipment bases, and column bases.
         3) Broom finish: Sidewalks, docks, concrete stairs, and ramps.

END OF SECTION
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SECTION 03 15 19
ANCHORAGE TO CONCRETE

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Requirements for all cast-in-place anchor bolts, anchor rods, reinforcing anchorage adhesive, and post-installed concrete anchors required for the Project but not specified elsewhere in the Contract Documents.
   2. Design of all concrete anchors not indicated on the Drawings including, but not limited to, installation of anchors into concrete for the following structural and nonstructural components:
      a. Structural members and accessories.
      b. Metal, wood, and plastic fabrications.
      c. Architectural components.
      d. Mechanical and electrical equipment and components.
      e. Plumbing, piping, and HVAC work.
      f. All other components requiring attachment to concrete.

B. Related Specification Sections include but are not necessarily limited to:
   1. Section 01 81 10 – Wind and Seismic Criteria
   2. Section 03 05 05 - Concrete Testing and Inspection.
   3. Section 26 05 36 - Cable Tray.
   4. Section 40 05 07 - Pipe Support Systems.

1.2 QUALITY ASSURANCE

A. Referenced Standards:
   1. American Concrete Institute (ACI):
      a. 318, Building Code Requirements for Structural Concrete and Commentary.
      b. 355.2, Seismic Testing of Post-Installed Concrete and Masonry Anchors in Cracked Concrete.
      c. 355.4, Qualification of Post-Installed Adhesive Anchors in Concrete.
   2. American Concrete Institute/Concrete Reinforcing Steel Institute (ACI-CRSI):
   3. American Institute of Steel Construction (AISC):
   4. ASTM International (ASTM):
      e. A307, Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.
      f. A496, Standard Specification for Steel Wire, Deformed, for Concrete Reinforcement.
   
   m. F2329, Standard Specification for Zinc Coating, Hot-Dip, Requirements for Application to Carbon and Alloy Steel Bolts, Screws, Washers, Nuts, and Special Threaded Fasteners

5. ICC Evaluation Service (ICC-ES):
   a. AC193, Acceptance Criteria for Mechanical Anchors in Concrete Elements.
   b. AC308, Acceptance Criteria for Post-Installed Adhesive Anchors in Concrete Elements.

B. Qualifications:
   1. Anchor designer for Contractor-designed post-installed anchors and cast in place anchorage shall be a professional civil engineer licensed in the State that the Project is located in.
   2. Installer for post-installed anchors shall be trained by the manufacturer or certified by a training program approved by the Engineer.

C. Post-installed anchors and related materials shall be listed by the following agencies:
   1. ICC-ES.
   2. Engineer approved equivalent.

1.3 DEFINITIONS

A. Adhesive Anchors:
   1. Post-installed anchors developing their strength primarily from chemical bond between the concrete and the anchor.
   2. Includes anchors using acrylics, epoxy and other similar adhesives.

B. Anchor Bolt: Any cast-in-place anchorage that is made of a headed (i.e. bolt) material.

C. Anchor Rod: Any cast-in-place or post-installed anchorage made from unheaded, threaded, rod or deformed bar material.

D. Concrete Anchor: Generic term for either an anchor bolt or an anchor rod.

E. Galvanizing: Hot-dip galvanizing per ASTM A123, ASTM A153 or ASTM F2329 with minimum coating of 2.0 OZ of zinc per square foot of metal (average of specimens) unless noted otherwise or dictated by standard.

F. Hardware: As defined in ASTM A153.

G. Installer or Applicator:
   1. Installer or applicator is the person actually installing or applying the product in the field at the Project site.
   2. Installer and applicator are synonymous.

H. MPII: Manufacturer’s printed installation instructions.

I. Mechanical Anchors:
   1. Post-installed anchors developing their strength from attachment other than thru adhesives or chemical bond to concrete.
   2. Includes expansion anchors, expansion sleeve, screw anchors, undercut anchors, specialty inserts and other similar types of anchorages.
   3. Drop-in anchors and other similar non-ICC ES approved anchors are not allowed.

J. Post-Installed Anchor: Any adhesive or mechanical anchor installed into previously placed and adequately cured concrete.

1.4 SUBMITTALS

A. Shop Drawings:
   1. Product technical data including:
      a. Acknowledgement that submitted products meet requirements of referenced standards.
      b. Manufacturer material data sheet for each anchor.
1) Clearly indicate which products on the data sheet are proposed for use on the Project.
c. Manufacturer's printed installation instructions.
d. Current ICC-ES report for each post-installed anchor system indicating the following:
   1) Certification that anchors meet all requirements indicated in this Specification.
   2) Performance data showing that anchor is approved for use in cracked concrete.
   3) Seismic design categories for which anchor system has been approved.
   4) Required installation procedures.
   5) Special inspection requirements for installation.
e. Contractor Designed Anchors:
   1) Show diameter and embedment depth of each anchor.
   2) Indicate compliance with ACI 318, Appendix D.
   3) Design tension and shear loads used for anchor design.
   4) Engineering design calculations:
      a) Indicate design load to each anchor.
      b) Develop anchor forces based on Design Criteria listed herein and/or manufacturer’s design information.
      c) Sealed and signed by contractor’s professional engineer.
      d) Calculations will be submitted for information purposes only.
   5) Provide torque values where pipe sleeves anchors are used.
f. Anchorage layout drawings and details:
   1) Indicate anchor diameter, embedment, length, anchor type, material and finish.
   2) Drawings showing location, configuration, spacing and edge distance.
   3) Type of post-installed anchor system used.
      a) Provide manufacturer’s ICC-ES report for the following:
         (1) Mechanical anchorage per ICC-ES AC193.
         (2) Adhesive anchorage per ICC-ES AC308.
B. Samples:
   1. Representative samples of concrete anchors may be requested by Engineer. Review will be for type and finish only. Compliance with all other requirements is exclusively the responsibility of the Contractor.
C. Informational Submittals:
   1. Certification of qualifications for each installer of post-installed anchors.
      a. Indicate successful completion or certification for each type of approved post-installed anchor as required by the Contract Documents.
      b. Provide one of the following for each type of anchor, as required by this specification section:
         1) Letter from manufacturer documenting successful training completion.
         2) Certification of completion for Engineer approved program.

1.5 DELIVERY, STORAGE, AND HANDLING
A. Deliver products to job site in manufacturer’s or distributor’s packaging undamaged and complete with installation instructions.
B. Store above ground on skids or other supports to keep items free of dirt and other foreign debris and to protect against corrosion.
C. Protect and handle materials in accordance with manufacturer’s recommendations to prevent damage or deterioration.

PART 2 - PRODUCTS
2.1 MATERIALS
A. Cast-in-place Concrete Anchors:
   1. Building and nonbuilding structures, unless otherwise specified:
a. ASTM F1554, Grade 36 or Grade 55 with weldability supplement S1 for galvanized or non-galvanized threaded rods.
b. ASTM A307, Grade A for galvanized headed bolts.
c. For Submerged or used in enclosed tankage, ASTM F593, Type 316.

1. All other cast-in-place concrete anchors for equipment:
   a. Stainless steel with matching nut and washer.
   b. Submerged application: ASTM F593, Type 316.
   c. Non-submerged application: ASTM F593, Type 304 or Type 316 anchors and washers

B. Post-Installed Mechanical and Adhesive Concrete Anchors:
   1. Stainless steel with matching nut and washer.
   2. Submerged application: ASTM F593, Type 316.
   3. Non-submerged application: ASTM F593, Type 304 or Type 316, with ASTM A563 nuts coated after torquing.

C. Reinforcement: See Section 03 21 00.

D. Headed Studs: ASTM A108 with a minimum yield strength of 50,000 PSI and a minimum tensile strength of 60,000 PSI.

E. Deformed Bar Anchors: ASTM A496 with minimum yield strength of 70,000 PSI and a minimum tensile strength of 80,000 PSI.

F. Washers:
   1. ASTM F436 unless noted otherwise, finish to match bolt.
   2. If stainless steel anchorage is being used for cast-in-place anchorage, furnish washers of the same material and alloy as in the accompanying anchorage.
   3. Plate washers: Minimum 1/2 IN thick fabricated ASTM A36 square plates as specified or required.
   4. Follow manufacturer’s requirements for all post-installed anchorage.

G. Nuts:
   1. ASTM A563 for all cast-in-place anchorage.
   2. If stainless steel anchorage is being used for cast-in-place anchorage in submerged or enclosed tankage, nuts shall meet ASTM F594 and be the matching material and alloy as in the accompanying anchorage.
   3. Follow manufacturer’s requirements if using post-installed anchorage.

H. Galvanizing Repair Paint:
   1. High zinc dust content paint for regalvanizing welds and abrasions.
   2. ASTM A780.
   3. Zinc content: Minimum 92% in dry film.
   4. ZRC "ZRC Cold Galvanizing" or Clearco "High Performance Zinc Spray."

I. Dissimilar Materials Protection: See Specification Section 09 96 00.

2.2 CONTRACTOR DESIGNED ANCHORAGE

A. Manufacturers:
   1. Post-installed anchor systems for the listed manufacturers will be considered only if a current ICC-ES evaluation report is submitted in accordance with the SUBMITTALS Article in PART 1 of this Specification Section and if the anchor system is approved by the Engineer.
      a. Hilti.
      b. Dewalt.
      c. Simpson Strong-Tie.

B. Design the anchorage when any of the following occur:
   1. Design load for concrete anchorage is shown on the Drawings.
   2. When specifically required by the Contract Documents.
3. When an anchorage is required but not specified in the Drawings.

C. Anchorage Design Loads:
1. Determine all of the design loads, including wind and seismic loads, per the building code. Additionally, specialty engineer is required to incorporate all static and dynamic loading forces established by the equipment manufacturer, where required for equipment.
   a. Anchorage of equipment and non-structural components: Use the actual dead and operating loads provided by the manufacturer.

D. When Contract Drawings indicate an anchor diameter or length, design shall incorporate these as “minimums.” Design these anchors and provide all necessary documentation as required herein.

E. Cast-in-Place Concrete Anchors:
1. Provide the material, nominal diameter, embedment length, spacing, edge distance and design capacity to resist the calculated load based on the requirements given in the building code including ACI 318, Appendix D.
2. Design assuming cracked concrete.

F. Post-installed Concrete Anchors:
1. Provide the manufacturer’s system name/type, nominal diameter, embedment depth, spacing, minimum edge distance, cover, and design capacity to resist the specified or calculated load based on requirements given in the building code, ACI 318, Appendix D and current ICC-ES report, for the anchor to be used.
2. Design assuming cracked concrete.

2.3 ENGINEER DESIGNED ANCHORAGE
A. When the size, length and details of anchorages are shown on Contract Structural Drawings, Contractor design of anchorage is not required unless otherwise indicated.

B. Manufacturers:
1. Additional newer post-installed anchor systems for the listed manufacturers will be considered only if a current evaluation agency report is submitted in accordance with the SUBMITTALS Article in PART 1 of this Specification Section, the anchor system is certified by ICC-ES for cracked concrete conditions, and if approved by the Engineer.
2. Mechanical Anchors:
   a. Hilti:
      1) Kwik Bolt TZ (ICC-ES ESR-1917).
3. Adhesive Concrete Anchors:
   a. Hilti:
      1) HIT RE 500 V3 (ICC ESR-3814).
4. Concrete Screw Anchors:
   a. Hilti:
      1) Kwik HUS-EZ Screw (ICC-ES ESR-3027).
   b. Substitution request to indicate the proposed anchor has the at least the same tension and shear strength as the specified anchor installed as indicated in the Contract Drawings.
   c. Calculations to be stamped by a Professional Engineer registered in the state that the Project is located in.

PART 3 - EXECUTION
3.1 GENERAL
A. Cast-in-Place Anchorage:
   1. Use where anchor rods or bolts are indicated on the Drawings, unless another anchor type is approved by the Engineer.
   2. Provide concrete anchorage as shown on the Drawings or as required to secure components to concrete.
B. Adhesive Anchorage:
   1. Use only where specifically indicated on the Drawings or when approved for use by the Engineer.
   2. May be used where subjected to vibration or where buried or submerged.
   3. Do not use in overhead applications or sustained tension loading conditions such as utility hangers.
   4. Contact Engineer for approval when anchors will not be installed in compliance with MPII

C. Mechanical Anchorage:
   1. Use only where specifically indicated on the Drawings or when approved for use by the Engineer.
   2. Do not use where subjected to vibration.
   3. May be used in overhead applications.
   4. Contact Engineer for clarification when anchors will not be installed in compliance with manufacturer's printed installation requirements.

D. Do not use powder actuated fasteners and other types of bolts and fasteners not specified herein for structural applications unless approved by the Engineer or specified in Contract Documents.

3.2 PREPARATION

A. Provide adequate time to allow for proper installation and inspection prior to placing concrete for cast-in-place concrete anchorage.

B. Prior to installation, inspect and verify areas and conditions under which concrete anchorage is to be installed.
   1. Notify Engineer of conditions detrimental to proper and timely completion of work.
   2. Do not proceed with work until unsatisfactory conditions have been corrected in a manner acceptable to the Engineer.

C. Special Inspection is required in accordance with the building code for all concrete anchorage.
   1. Notify the Special Inspector that an inspection is required prior to concrete placement (or during post-installed anchorage installation).
   2. See the FIELD QUALITY CONTROL Article in PART 3 of this Specification Section for additional requirements.

D. Post-installed anchor manufacturer’s representative shall demonstrate and observe the proper installation procedures for the post-installed anchors at no additional expense to the Owner.
   1. Follow such procedures to assure acceptable installation.
   2. Adhesive anchors must be installed in concrete aged a minimum of 21 days.

3.3 INSTALLATION

A. Tie cast-in-place anchorage in position to embedded reinforcing steel using wire.
   1. Tack welding of anchorage is prohibited.
   2. Chase threads as required and coat the projected portion of carbon steel anchors and nut threads with a heavy coat of clean grease after concrete has cured.
   3. Anchorage location tolerance shall be in accordance with AISC 303.
   4. Provide steel or durable wood templates for all column and equipment anchorage.
      a. Templates to be placed above top of concrete and not impede proper concrete placement and consolidation.

B. Unless noted or specified otherwise:
   1. Connect aluminum and steel members to concrete and masonry using stainless steel cast-in-place anchorage unless shown otherwise.
      a. Provide dissimilar materials protection as required.
   2. Provide washers for all anchorage.
   3. Where exposed, extend threaded anchorage a minimum of 1/2 IN above the top of the fully engaged nut.
a. If anchorage is cut off to the required maximum height, threads must be dressed to allow nuts to be removed without damage to the nuts.

C. Do the following after nuts are snug-tightened down:
1. If using post-installed anchorage, follow MPII.
2. Upset threads of anchorage to prevent nuts from backing off.
   a. Provide double nut or lock nut in lieu of upset threads for items that may require removal in the future.
3. For all other cast-in-place anchorage material, tighten nuts down an additional 1/8 turn beyond snug tight to prevent nuts from backing off.
4. If two nuts are used per concrete anchor above the base plate, tighten the top nut an additional 1/8 turn to “lock” the two nuts together.
5. If using post-installed anchorage, follow MPII.

D. Assure that embedded items are protected from damage and are not filled in with concrete.

E. Secure architectural components such that it will not be aesthetically distorted and fasteners will not be overstressed from expansion, contraction, or installation.

F. Repair damaged galvanized surfaces in accordance with ASTM A780.
   1. Prepare damaged surfaces by abrasive blasting or power sanding.
   2. Apply galvanizing repair paint to minimum 6 mils DFT in accordance with manufacturer's instructions and ASTM A780.

G. For post-installed anchors, comply with the MPII on the hole diameter and depth required to fully develop the tensile strength of the anchor or reinforcing bar.
   1. Use hammer drills to create holes.
   2. Properly clean out the hole per the ICC-ES reports utilizing a non-metallic fiber bristle brush and compressed air or as otherwise required to remove all loose material from the hole prior to installing the anchor in the presence of the Special Inspector.

3.4 FIELD QUALITY CONTROL
A. Field Inspection and Testing
   1. Owner reserves the right to inspect and test completed anchorage at a minimum of 10% to 100%.
   2. Such testing shall conform to requirements of ACI 355.2 and/or ACI 355.4 as applicable.
   3. Failed anchors shall be satisfactorily replaced at no cost to Owner.

3.5 CLEANING
A. After concrete has been placed, remove protection and clean all anchorage of all concrete, dirt, and other foreign matter.

B. Provide surface acceptable to receive field applied paint coatings as shown in Drawings

END OF SECTION
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PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

A. All equipment anchoring and mounting shall be in accordance with manufacturer’s requirements for the seismic zone criteria.

1.2 SHIPMENT AND STORAGE

A. Materials and equipment shall be stored in a manner to keep them dry and clean. Equipment and materials to be located indoors shall be stored indoors and sealed with plastic film wrap. Electrical and electronic equipment found stored or staged outdoors over night or in inclement weather shall be considered grounds for equipment rejection and shall be replaced at no cost to the Owner.

1.3 SUBMITTALS

A. Action Submittals: Provide arrangement and dimensional drawings, ratings, schematic and wiring diagrams, connection diagrams, bill of materials, nameplate schedule, and manufacturer descriptive information.
   1. Boxes and device plates.
   2. Junction and pull boxes.
   3. Circuit breakers and switches.
   4. Support and framing channels.
   5. Nameplates.
   6. Conduit, fittings, and accessories.
   7. Conductors, cable, and accessories.
   9. Cable Tray Systems:
      a. Dimensional drawings, calculations, and descriptive information.
      b. NEMA load/span designation and how it was selected.
      c. Support span length and pounds-per-foot actual and future cable loading at locations, with safety factor used.
      d. Location and magnitude of maximum simple beam deflection of tray for loading specified.
      e. Layout drawings and list of accessories being provided.

B. Informational Submittals:
   1. Factory test reports.
   2. Field test reports.
   3. Signed permits indicating Work is acceptable to regulatory authorities having jurisdiction.
   4. Operation and Maintenance Data:
      a. Provide for all equipment, as well as each device having features that can require adjustment, configuration, or maintenance.
      b. Minimum information shall include manufacturer’s preprinted instruction manual, one copy of the approved submittal information for the item, tabulation of any settings, and copies of any test reports.

1.4 APPROVAL BY AUTHORITY HAVING JURISDICTION

A. Provide the Work in accordance with NFPA 70, National Electrical Code (NEC). Where required by the Authority Having Jurisdiction (AHJ), material and equipment shall be labeled or listed by a nationally recognized testing laboratory (or other organization acceptable to the AHJ) in order to provide a basis for approval under the NEC.
B. Materials and equipment manufactured within the scope of standards published by Underwriters Laboratories, Inc. shall conform to those standards and shall have an applied UL listing mark or label.

1.5 ENVIRONMENTAL CONDITIONS

A. Size and de-rate equipment and materials for the ambient conditions, but not less than an ambient temperature of 40 degrees C at an elevation of 5,400 feet above sea level without exceeding the manufacturer’s stated tolerances.

B. The area outside the UV Disinfection channels is classified for Industrial Use. Use NEMA 12 materials and methods unless noted otherwise.

1.6 EQUIPMENT COORDINATION

A. The Contractor is responsible to coordinate the equipment supplied from various manufacturers and vendors. This includes but is not limited to the following:
   1. Obtaining specific information on equipment ratings and sizes and verifying the electrical components supplied meet, or match the requirements such as voltage, phase, frequency, starter types, etc.
   2. Providing equipment that will fit within the space allocated and meet OSHA and N.E.C. clearances.
   3. Coordination of the supplied equipment’s electrical power and control requirements.
   4. Providing power and control equipment, wiring, and raceways to meet the requirements of the mechanical equipment supplied.
   5. Providing all necessary control wiring and components for any special requirements from an equipment manufacturer.

B. The Contractor shall verify as a minimum:
   1. Correct voltage, phase and frequency
   2. Size and space requirements
   3. Mounting requirements
   4. Correct motor starter type and size.
   5. Proper coordination with the controls and control system integrator.

C. Bring any discrepancies between the electrical equipment and other equipment to the immediate attention of the Owner.

1.7 WIRING FOR VENDOR PACKAGES

A. Equipment specifications indicate when the Vendor is responsible for providing interconnection wiring between components of a Vendor package installed on separate skids or assemblies. In this circumstance, interconnection wiring between skids or assemblies in a Vendor package shall be by Vendor.

B. Where equipment specifications do not specify Vendor furnished wiring between skids or assemblies in a Vendor package, the Contractor shall provide and install interconnection wiring between skids or assemblies per the Vendor’s interconnection wiring requirements. Interconnection wiring between skids or assemblies in a Vendor package is not shown on the drawings.

C. Determination of circuit requirements.
   1. Coordinate cable/conductor requirements with the selected Vendors to determine the correct wiring required to interconnect the package system components/skids.
   2. Wiring between Vendor furnished components shipped on separate skids or assemblies shall conform to Vendor requirements and this specification.
   3. Wiring between the plant control system and Packages system components/skids are as shown on the drawings.
   4. Wiring between external power supplies and the packaged system components/skids are as shown on the drawings.
D. Update contract documents in the record drawing set to include the work provided for wiring the vendor packages.

1.8 BASIS OF DESIGN

A. The basis of the mechanical and electrical design is the installation of equipment as shown in the electrical one-line drawing(s) and load/panel schedules. In the event that different equipment are provided in order for the vendor’s equipment to meet mechanical performance requirements, the contractor shall coordinate various suppliers, vendors, and subcontractors to change the required electrical conduit, circuits, breakers, motor control center sections, starters units and accessories, etc. as necessary to meet the vendor’s equipment installation requirements of the National Electrical Code. The traits and characteristics of all provided materials, equipment, and devices shall meet the specifications. These changes to materials, equipment, and devices shall be at no cost to the Owner. Electrical submittal information shall be coordinated with the equipment provided.

PART 2 - PRODUCTS

2.1 GENERAL

A. Products shall comply with all applicable provisions of NFPA 70.

B. Like Items of Equipment: Products of one manufacturer in order to achieve standardization for appearance, operation, maintenance, spare parts, and manufacturer’s service.

C. Equipment Finish: Manufacturer’s standard finish color, unless otherwise indicated.

2.2 ENCLOSURES

A. Finish: Sheet metal structural and enclosure parts completely painted using an electrodeposition process so interior and exterior surfaces as well as bolted structural joints have a complete finish coat on and between them.

B. Color: Manufacturer’s standard color (gray) baked-on enamel, unless otherwise shown.

C. Barriers: Provide metal barriers within enclosures to separate wiring of different systems and voltage.

D. Enclosure Selections: Except as shown otherwise, provide electrical enclosures according to the following table:

<table>
<thead>
<tr>
<th>Location</th>
<th>Finish</th>
<th>Environment</th>
<th>NEMA 250 Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indoor</td>
<td>Finished</td>
<td>Dry</td>
<td>1</td>
</tr>
<tr>
<td>Indoor</td>
<td>Unfinished</td>
<td>Industrial Use</td>
<td>12</td>
</tr>
<tr>
<td>Outdoor</td>
<td>Any</td>
<td>Wet (rain/snow)</td>
<td>3R</td>
</tr>
<tr>
<td>Indoor and Outdoor</td>
<td>Any</td>
<td>Corrosive</td>
<td>4X: 304 Stainless Steel</td>
</tr>
<tr>
<td>Indoor and Outdoor</td>
<td>Any</td>
<td>Hazardous Gas</td>
<td>7</td>
</tr>
</tbody>
</table>

2.3 OUTLET AND DEVICE BOXES

A. Cast Metal:
   1. Box: Cast ferrous metal.
   2. Cover: Gasketed, weatherproof, and cast ferrous metal with stainless steel screws.
   3. Hubs: Threaded.
   4. Lugs: Cast Mounting.
   5. Manufacturers and Products, Nonhazardous Locations:
      a. Crouse-Hinds; Type FS or FD.
      b. Appleton; Type FS or FD.
   6. Manufacturers and Products, Hazardous Locations:
a. Crouse-Hinds; Type GUA or EAJ.
   b. Appleton; Type GR.

2.4 **JUNCTION AND PULL BOXES**
   A. Outlet Boxes Used as Junction or Pull Box: As specified under Article Outlet and Device Boxes.
   B. Conduit Bodies Used as Junction Boxes: As specified under Article Conduit and Fittings.

2.5 **WIRING DEVICES**
   A. Receptacle, Single and Duplex:
      1. NEMA WD 1 and FS W-C-596.
      2. Specification grade, two-pole, three-wire grounding type with screw type wire terminals
         suitable for No. 10 AWG.
      3. High strength, thermoplastic base color.
      5. Contact Arrangement: Contact to be made on two sides of each inserted blade without
         detent.
      7. One-piece mounting strap with integral ground contact (rivetless construction).
      8. Manufacturers and Products:
         a. Arrow Hart; 5262 Series.
         b. Leviton; 5262/5362 Series.
         c. Bryant; 5262/5362 Series.
         d. Hubbell; 5262/5362 Series.
   B. Receptacle, Ground Fault Circuit Interrupter:
      1. Duplex, listed Class A to UL Standard 943, tripping at 5 mA.
      2. Color: Brown
      4. Size: For 2-inch by 4-inch outlet boxes.
      5. Standard Model: NEMA WD 1, with screw terminals and provisions for testing.
      6. Impact resistant nylon face.
      7. Manufacturers:
         a. Bryant.
         b. Hubbell.
         c. Leviton.

2.6 **DEVICE PLATES**
   A. General: Sectional type plates not permitted.
   B. Cast Metal:
      1. Material: Malleable ferrous metal with gaskets.
      2. Screw: Oval-head stainless steel.

2.7 **MOTOR CONTROL CENTER CIRCUIT BREAKERS**
   A. Existing motor control center: Square D Model 6, 600-amp, 480-volt, 3-phase, 42kA
   B. Molded Case Circuit Breaker:
      1. Suitable for use in existing motor control center.
      2. In accordance with NEMA AB1 and UL489.
      3. Thermal magnetic trip and interrupting capacity required for connection to system with
         short circuit capacity indicated.
      4. The tripped position shall be clearly indicated by breaker handle maintaining a position
         between “ON” and “OFF.” All poles shall open, close, and trip simultaneously.
      5. Suitable for use with 75 degree C wire at full NEC 75 degrees C ampacity.
2.8 SUPPORT AND FRAMING CHANNELS
A. Carbon Steel Framing Channel:
   1. Material: Rolled, mild strip steel, 12 gauge, ASTM A1011/A1011M, Grade 33.
B. Manufacturers:
   1. B-Line Systems, Inc.
   2. Unistrut Corp.

2.9 NAMEPLATES
A. Material: Laminated plastic.
B. Attachment: Adhesive.
C. Color: Black, engraved to a white core.
D. Engraving:
   1. Devices and Equipment: Name or tag shown.
   2. Panelboards:
      a. Designation.
      b. Service voltage.
      c. Phases.
   3. Minimum Requirement: Label metering and power distribution equipment, local control panels, junction boxes, motor controls, and transformers.
E. Letter Height:
   1. Pushbuttons, Selector Switches, and Other Devices: 1/8 inch.
   2. Equipment and Panelboards: 1/4 inch.

2.10 CONDUIT AND FITTINGS
A. Intermediate Metal Conduit (IMC):
   1. Meet requirements of NEMA C80.6 and UL 1242.
   2. Material: Hot-dip galvanized, with chromated and lacquered protective layer.
B. Rigid Galvanized Steel Conduit (RGS):
   1. Meet requirements of NEMA C80.1 and UL 6.
   2. Material: Hot-dip galvanized, with chromated protective layer.
C. Flexible Metal, Liquid-Tight Conduit:
   1. UL 360 listed for 105 degrees C insulated conductors.
D. Fittings:
   1. Provide bushings, grounding bushings, conduit hubs, conduit bodies, couplings, unions, expansion fittings, and cable sealing fittings, as applicable.
   2. Rigid Galvanized Steel and Intermediate Metal Conduit:
      a. Meet requirements of UL 514B.
      b. Type: Threaded, galvanized.
   3. Flexible Metal, Liquid-Tight Conduit:
      a. Metal insulated throat connectors with integral nylon or plastic bushing rated for 105 degrees C.
      b. Insulated throat and sealing O-rings.

2.11 CONDUCTORS
A. Conductors 600 Volts and Below:
   1. Conform to applicable requirements of NEMA WC 71, WC 72, and WC 74.
   2. Conductor Type: Stranded copper.
   3. Insulation: Type THHN/THWN, except for sizes No. 6 and larger, with XHHW-2 insulation.
2.12 600-VOLT RATED CABLE:

A. General:
   1. Type TC, meeting requirements of UL 1277, including Vertical Tray Flame Test at 20,000 Btu per hour, and NFPA 70, Article 340, or UL 13 meeting requirements of NFPA 70, Article 725.
   2. Permanently and legibly marked with manufacturer’s name, maximum working voltage for which cable was tested, type of cable, and UL listing mark.
   3. Suitable for installation in open air, in cable trays, or conduit.
   5. Overall Outer Jacket: PVC, flame-retardant, sunlight- and oil-resistant.

B. Multiconductor Control Cable:
   1. Conductors:
      a. 14 AWG, seven-strand copper.
      b. Insulation: 15-mil PVC with 4-mil nylon.
      c. UL 1581 listed as Type THHN/THWN rated VW-1.
      d. Conductor group bound with spiral wrap of barrier tape.
      e. Color Code: In accordance with ICEA S-58-679, Method 1, Table 2.
   2. Cable: Passes the ICEA T-29-520, 210,000 Btu per hour Vertical Tray Flame Test.
   3. Cable Sizes:

<table>
<thead>
<tr>
<th>No. of Conductors</th>
<th>Max. Outside Diameter (Inches)</th>
<th>Jacket Thickness (Mils)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>0.41</td>
<td>45</td>
</tr>
<tr>
<td>5</td>
<td>0.48</td>
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<td>1.00</td>
<td>60</td>
</tr>
<tr>
<td>37</td>
<td>1.15</td>
<td>80</td>
</tr>
</tbody>
</table>

4. Manufacturers:
   a. Okonite Co.
   b. Southwire.

C. No. 16 AWG, Twisted, Shielded Pair (TSP), Instrumentation Cable: Single pair, designed for noise rejection for process control, computer, or data log applications meeting NEMA WC 55 requirements.
   1. Outer Jacket: 45 mils nominal thickness.
   2. Individual Pair Shield: 1.35 mils, double-faced aluminum/synthetic polymer overlapped to provide 100 percent coverage.
   3. Dimension: 0.31-inch nominal outside diameter.
   4. Conductors:
      a. Bare soft annealed copper, Class B, seven-strand concentric, meeting requirements of ASTM B8.
      b. 20 AWG, seven-strand tinned copper drain wire.
      c. Insulation: 15 mils nominal PVC.
      d. Jacket: 4 mils nominal nylon.
      e. Color Code: Pair conductors black and red.
   5. Manufacturers: Okonite Co.

D. Foil Shielded/Shielded Twisted Pair (F/STP) Telephone and Data Cable, 600V:
   1. Category 6A, UL listed, and third party verified to comply with TIA/EIA 568-C.2 Category 6A requirements.
2. Suitable for high-speed network applications including gigabit Ethernet and video. Cable shall be interoperable with other standards compliant products and shall be backward compatible with Category 5 and Category 5e.
3. Four each individually twisted pair and PVC jacket.
4. 1585 Ethernet cable as recommended by PLC manufacturer.

2.13 ACCESSORIES FOR CONDUCTORS:

A. Tape:
   1. General Purpose, Flame Retardant: 7 mils, vinyl plastic, Scotch Brand 33, rated for 90 degrees C minimum, meeting requirements of UL 510.
   2. Flame Retardant, Cold and Weather Resistant: 8.5 mils, vinyl plastic, Scotch Brand 88.
   3. Arc and Fireproofing:
      a. 30 mils, elastomer.
      b. Manufacturers and Products:
         1) 3M; Scotch Brand 77, with Scotch Brand 69 glass cloth tapebinder.
         2) Plymount; Plyarc 53, with Plyglas 77 glass cloth tapebinder.

B. Identification Devices:
   1. Sleeve-type, permanent, PVC, yellow or white, with legible machine-printed black markings.
   2. Manufacturer and Products: Raychem; Type D-SCE or ZH-SCE.

C. Connectors and Terminations:
   1. Nylon, Self-Insulated Crimp Connectors:
      a. Manufacturers and Products:
         1) Thomas & Betts; Sta-Kon.
         2) Burndy; Insulug.
         3) ILSCO.

D. Self-Insulated, Freespring Wire Connector (Wire Nuts):
   1. Plated steel, square wire springs.
   2. UL Standard 486C.
   3. Manufacturers and Products:
      a. Thomas & Betts.
      b. Ideal; Twister.

E. Cable Lugs:
   1. In accordance with NEMA CC 1.
   2. Rated 600 volts of same material as conductor metal.
   3. Uninsulated Crimp Connectors and Terminators:
      a. Suitable for use with 75 degrees C wire at full NFPA 70, 75 degrees C ampacity.
      b. Manufacturers and Products:
         1) Thomas & Betts; Color-Keyed.
         2) Burndy; Hydent.
         3) ILSCO.
   4. Uninsulated, Bolted, Two-Way Connectors and Terminators:
      a. Manufacturers and Products:
         1) Thomas & Betts; Locktite.
         2) Burndy; Quiklug.
         3) ILSCO.

F. Cable Ties:
   1. Nylon, adjustable, self-locking, and reusable.
   2. Manufacturer and Product: Thomas & Betts; TY-RAP.

G. Heat Shrinkable Insulation:
   1. Thermally stabilized, crosslinked polyolefin.
   2. Manufacturer and Product: Thomas & Betts; SHRINK-KON.
H. F/UTP cable:
   1. Provide terminators, connectors, and junctions necessary for a complete Ethernet/IP system.

2.14 CABLE TRAYS

A. Meet requirements of NEMA VE 1.
B. Type: Ladder of welded construction.
C. Material: Copper-free aluminum alloy 6063-T6 finish.
D. Dimensions: 18 inches wide, with 4-inch NEMA nominal inside fill depth and fittings with 24-inch bending radius.
E. Cover: Solid, minimum 0.40-inch-thick aluminum.
F. Fittings of same material as cross-sectional tray area and hardware of same material as cable tray.
G. Tray Grounding: Conform to NFPA 70 and NEMA VE 1.
H. Provide next higher NEMA VE 1 class designation than required for support of designed span length.
I. Design Loads: Use working load adequate for actual cable installed plus 50 percent additional weight allowance for future cables plus 200-pound concentrated static load applied between side rails at midspan with safety factor of 1.5 in accordance with NEMA VE 1, Table 3-1.
J. Expansion Joints: NEMA VE 1 for 25 degrees F maximum temperature variation.
K. Furnish cable tray with no sharp edges, burrs, or weld projections.
L. Warning Signs: 1-1/2-inch high black lettering on yellow background with legend, “WARNING, NOT TO BE USED AS WALKWAY, LADDER, OR SUPPORT FOR LADDERS OR PERSONNEL.”

M. Manufacturers:
   1. B-Line Systems, Inc.
   2. Square-D.
   4. T. J. Cope, Inc.

2.15 GROUNDING

A. Ground Rods: Provide copper with minimum diameter of 5/8-inch, and length of 10 feet.
B. Ground Conductors: Stranded copper.
C. Connectors:
   1. Exothermic Weld Type:
      a. Outdoor Weld: Suitable for exposure to elements or direct burial.
      b. Indoor Weld: Utilize low-smoke, low-emission process.
      c. Manufacturers:
         1) Erico Products, Inc.; Cadweld and Cadweld Exolon.
         2) Thermoweld.
   2. Compression Type:
      a. Compress-deforming type; wrought copper extrusion material.
      b. Single indentation for conductors 6 AWG and smaller.
      c. Double indentation with extended barrel for conductors 4 AWG and larger.
      d. Single barrels prefilled with oxide-inhibiting and anti-seizing compound.
      e. Manufacturers:
         1) Burndy Corp.
         2) Thomas and Betts Co.
         3) ILSCO.
3. Mechanical Type:
   a. Split-bolt, saddle, or cone screw type; copper alloy material.
   b. Manufacturers:
      1) Burndy Corp.
      2) Thomas and Betts Co.

PART 3 - EXECUTION

3.1 GENERAL
   A. Install materials and equipment in accordance with manufacturer’s instructions and recommendations.
   B. Work shall comply with all applicable provisions of NECA 1.
   C. Install materials and equipment in hazardous areas in a manner acceptable to regulatory authority having jurisdiction for the class, division, and group of hazardous areas shown.
   D. Electrical Drawings show general locations of equipment, devices, and raceway, unless specifically dimensioned.

3.2 COMBINING CIRCUITS INTO COMMON RACEWAY
   A. Drawings show each homerun circuit. Do not combine power or control circuits into common raceways without authorization of Engineer.
   B. Homerun circuits shown on Drawings indicate functional wiring requirements for power and control circuits. Circuits may be combined into common raceways in accordance with the following requirements:
      1. Analog control circuits from devices in same general area to same destination.
         a. Do not combine power or AC discrete control circuits in same conduit with analog circuits.
         b. Do not combine Class 2 or Class 3 circuits including, but not limited to, HVAC control circuits, fire alarm circuits, paging system circuits with power or Class 1 circuits.
         c. Analog circuits shall be continuous from source to destination. Do not add TJB, splice, or combine into a multi-pair cable without authorization of Engineer.
         d. Raceways: Do not exceed 40 percent fill.
         e. Record and document all changes on record drawings.
      2. Discrete control circuits from devices in the same general area to the same destination.
         a. Do not combine power or analog control circuits in same conduit with discrete circuits.
         b. Do not combine Class 2 or Class 3 circuits including, but not limited to, HVAC control circuits, fire alarm circuits, and paging system circuits with power or Class 1 circuits.
         c. Raceways: Do not exceed 40 percent fill.
         d. Record and document all changes on record drawings.
      3. Power circuits from loads in same general area to same source location (such as panelboard, switchboard, and low voltage motor control center).
         a. Lighting Circuits: Combine no more than three circuits to a single raceway. Contractor is responsible for increasing conduit and conductor size for derating as required by NEC.
         b. Receptacle Circuits, 120-Volt Only: Combine no more than three circuits to a single raceway. Provide a separate neutral conductor for each circuit. Contractor is responsible for increasing conduit and conductor size for derating as required by NEC.
         c. All Other Power Circuits: Do not combine power circuits without authorization of Engineer.

3.3 DEMOLITION
   A. General Demolition:
      1. Where shown, de-energize and disconnect nonelectrical equipment for removal by others.
      2. Where shown, de-energize, disconnect, and remove electrical equipment.
3. Remove affected circuits and raceways back to serving panelboard or control panel. Where affected circuits are consolidated with others, remove raceways back to first shared conduit or box. Where underground or embedded raceways are to be abandoned, remove raceway to 1 inch below surface of structure or 12 inches below grade and restore existing surface.

3.4 PROTECTION FOLLOWING INSTALLATION
   A. Protect materials and equipment from corrosion, physical damage, and effects of moisture on insulation.
   B. Cap conduit runs during construction with manufactured seals.
   C. Close openings in boxes or equipment during construction.

3.5 OUTLET AND DEVICE BOXES
   A. Install suitable for conditions encountered at each outlet or device in wiring or raceway system, sized to meet NFPA 70 requirements.
   B. Size:
      1. Depth: Minimum 2 inches, unless otherwise required by structural conditions. Box extensions not permitted.
      2. Switch and Receptacle: Minimum 2-inch by 4-inch sheet steel device box.
   C. Locations:
      1. Drawing locations are approximate.
      2. To avoid interference with mechanical equipment or structural features, relocate outlets as directed by Engineer.
   D. Mounting Height:
      1. General:
         a. Dimensions given to centerline of box.
         b. Where specified heights do not suit building construction or finish, mount as directed by Engineer.
      2. Receptacles:
         a. Industrial Areas: 48 inches above floor.
   E. Install plumb and level.
   F. Support boxes independently of conduit by attachment to building structure or structural member.
   G. Box Type (Steel Raceway System): Cast metal.

3.6 JUNCTION AND PULL BOXES
   A. Install where shown and where necessary to terminate, tap-off, or redirect multiple conduit runs.
   B. Install pull boxes where necessary in raceway system to facilitate conductor installation.
   C. Install in conduit runs at least every 150 feet or after the equivalent of three right-angle bends.
   D. Use outlet boxes as junction and pull boxes wherever possible and allowed by applicable codes.
   E. Use conduit bodies as junction and pull boxes where no splices are required and their use is allowed by applicable codes.
   F. Installed boxes shall be accessible.
   G. Do not install on finished surfaces.
   H. Install plumb and level.
   I. Support boxes independently of conduit by attachment to building structure or structural member.
   J. Mounting Hardware: Stainless steel.
3.7 WIRING DEVICES
A. Receptacles:
1. Install with grounding slot down except where horizontal mounting is shown, in which case install with neutral slot up.
2. Ground receptacles to boxes with grounding wire only.
3. Weatherproof Receptacles:
   a. Install in cast metal box.
   b. Install such that hinge for protective cover is above receptacle opening.

3.8 DEVICE PLATES
A. Securely fasten to wiring device; ensure a tight fit to box.
B. Surface Mounted: Plate shall not extend beyond sides of box, unless plates have no sharp corners or edges.
C. Install with alignment tolerance to box of 1/16 inch.
D. Engrave with designated titles.
E. Types (Unless Otherwise Shown): Cast.

3.9 SUPPORT AND FRAMING CHANNELS
A. Install where required for mounting and supporting electrical equipment and raceway systems.
B. Channel Type: Carbon Steel
C. Paint carbon steel channel cut ends prior to installation with zinc-rich primer.

3.10 NAMEPLATES
A. Provide identifying nameplate on all equipment.

3.11 CONDUIT AND FITTINGS
A. General:
1. Crushed or deformed raceways not permitted.
2. Maintain raceway entirely free of obstructions and moisture.
3. Immediately after installation, plug or cap raceway ends with watertight and dust-tight seals until time for pulling in conductors.
4. Sealing Fittings: Provide drain seal in vertical raceways where condensate may collect above sealing fitting.
5. Avoid moisture traps where possible. When unavoidable in exposed conduit runs, provide junction box and drain fitting at conduit low point.
6. Group raceways installed in same area.
7. Follow structural surface contours when installing exposed raceways. Avoid obstruction of passageways.
8. Run exposed raceways parallel or perpendicular to walls, structural members, or intersections of vertical planes.
9. Install watertight fittings in outdoor, underground, or wet locations.
10. Paint threads and cut ends, before assembly of fittings, galvanized conduit installed in exposed or damp locations with zinc-rich paint or liquid galvanizing compound.
11. Metal conduit to be reamed, burrs removed, and cleaned before installation of conductors, wires, or cables.
12. Install concealed, embedded, and buried raceways so that they emerge at right angles to surface and have no curved portion exposed.
13. Install conduits for fiber optic cables, telephone cables, and Category 6 data cables in strict conformance with the requirements of EIA/TIA 569.

B. Conduit Application:
1. Minimum Diameter: \( \frac{3}{4} \) inch.
2. Indoor, Exposed: Intermediate metal or rigid galvanized steel.

C. Connections:
1. For motors-, wall-, or ceiling-mounted fans and unit heaters, dry type transformers, electrically operated valves, instrumentation, and other equipment where flexible connection is required to minimize vibration:
   a. General: Flexible metal, liquid-tight conduit.
   b. Length: 18 inches minimum, 60 inches maximum, sufficient to allow movement or adjustment of equipment.

D. Penetrations:
1. Make at right angles, unless otherwise shown.
2. Notching or penetration of structural members, including footings and beams, not permitted.
3. Fire-Rated Walls, Floors, or Ceilings: Firestop openings around penetrations to maintain fire-resistance rating.
5. Entering Structures:
   a. General: Seal raceway at the first box or outlet with oakum or expandable plastic compound to prevent the entrance of gases or liquids from one area to another.
   b. Concrete Roof or Membrane Waterproofed Wall or Floor: Provide watertight seal.
   c. Existing or Precast Wall (Underground): Core drill wall and install watertight entrance seal device.
   d. Nonwaterproofed Wall or Floor (Underground, without Concrete Encasement):
      1) Provide Schedule 40 galvanized pipe sleeve or watertight entrance seal device.
      2) Fill space between raceway and sleeve with expandable plastic compound or oakum and lead joint on each side.

E. Support:
1. Support from structural members only, at intervals not exceeding NFPA 70 requirements, and in any case not exceeding 8 feet. Do not support from piping, pipe supports, or other raceways.
2. Application/Type of Conduit Strap:
   a. Steel Conduit: Zinc-coated steel, pregalvanized steel, or malleable iron.
3. Provide and attach wall brackets, strap hangers, or ceiling trapeze as follows:
   a. Wood: Wood screws.
   b. Hollow Masonry Units: Toggle bolts.
   c. Concrete or Brick: Expansion shields, or threaded studs driven in by powder charge, with lock washers and nuts.
   e. Location/Type of Hardware: Stainless steel.

F. Bends:
1. Install concealed raceways with a minimum of bends in the shortest practical distance.
2. Make bends and offsets of longest practical radius. Bends in conduits and ducts being installed for fiber optic cables shall be not less than 20 times cable diameter, 15 inches minimum.
3. Install with symmetrical bends or cast metal fittings.
4. Avoid field-made bends and offsets, but where necessary, make with acceptable hickey or bending machine. Do not heat metal raceways to facilitate bending.
5. Make bends in parallel or banked runs from same center or centerline with same radius so that bends are parallel.
6. Factory elbows may be installed in parallel or banked raceways if there is change in plane of run and raceways are same size.
7. Flexible Conduit: Do not make bends that exceed allowable conductor bending radius of cable to be installed or that significantly restricts conduit flexibility.
G. Expansion and Deflection Fittings: Provide on all raceways at structural expansion joints and in long tangential runs.

H. Termination at Enclosures:
   2. Nonmetallic, Cabinets, and Enclosures: Terminate conduit in threaded conduit hubs, maintaining enclosure integrity.
   3. Sheet Metal Boxes, Cabinets, and Enclosures:
      a. Intermediate metal or rigid galvanized steel conduit:
         1) Provide one lock nut each on inside and outside of enclosure.
         2) Install grounding bushing.
         3) Provide bonding jumper from grounding bushing to equipment ground bus or ground pad; if neither ground bus nor pad exists, connect jumper to lag bolt attached to metal enclosure.
         4) Install insulated bushing on ends of conduit where grounding is not required.
         5) Provide insulated throat when conduit terminates in sheet metal boxes having threaded hubs.
         6) Utilize sealing locknuts or threaded hubs on outside of NEMA 3R and NEMA 12 enclosures.
         7) Terminate conduits with threaded conduit hubs at NEMA 4 and 4X boxes and enclosures.
      b. Flexible Metal Conduit: Provide two-screw type, insulated, malleable iron connectors.
   4. Free-Standing Enclosures:
      a. Terminate metal conduit entering bottom with grounding bushing; provide a grounding jumper extending to equipment ground bus or grounding pad.

I. Empty Raceways:
   1. Provide permanent, removable cap over each end.
   2. Provide nylon pull cord.

3.12 CONDUCTORS AND CABLES

A. Conductor storage, handling, and installation shall be in accordance with manufacturer’s recommendations.

B. Do not exceed manufacturer’s recommendations for maximum pulling tensions and minimum bending radii.

C. Conduit system shall be complete prior to drawing conductors. Lubricate prior to pulling into conduit. Lubrication type shall be as approved by conductor manufacturer.

D. Terminate all conductors and cables, unless otherwise shown.

E. Do not splice conductors, unless specifically indicated or approved by Engineer.

F. Bundling: Where single conductors and cables in manholes, handholes, vaults, cable trays, and other indicated locations are not wrapped together by some other means, bundle conductors from each conduit throughout their exposed length with cable ties placed at intervals not exceeding 12 inches.

G. Wiring within Equipment and Local Control Panels: Remove surplus wire, dress, bundle, and secure.

H. Power Conductor Color Coding:
   1. No. 6 AWG and Larger: Apply general purpose, flame retardant tape at each end, and at accessible locations wrapped at least six full overlapping turns, covering an area 1-1/2 to 2 inches wide.
   2. No. 8 AWG and Smaller: Provide colored conductors.
   3. Colors:
c. Live Wires, 240/120-Volt, Three-Phase, Four-Wire, Delta, and Center Tap Ground on Single-Phase:
   1) Phase A: Black
   2) High (wild) Leg: Orange
   3) Phase C: Blue
d. Live Wires, 277/480-Volt, Three-Phase System: Brown, orange, yellow.
e. Ground Wire: Green.

I. Connections and Terminations:
   1. Install wire nuts only on solid conductors.
   2. Install nylon self-insulated crimp connectors and terminators for instrumentation and control circuit conductors.
   3. Tape insulate all uninsulated connections.
   4. Install crimp connectors and compression lugs with tools approved by connector manufacturer.

3.13 GROUNDING

A. Grounding shall be in compliance with NFPA 70 and as shown.
B. Ground electrical service neutral at service entrance equipment to supplementary grounding electrodes.
C. Ground each separately derived system neutral to nearest effectively grounded building structural steel member or separate grounding electrode.
D. Bond together system neutrals, service equipment enclosures, exposed noncurrent-carrying metal parts of electrical equipment, metal raceways, ground conductor in raceways and cables, receptacle ground connections, and metal piping systems.
E. Shielded Instrumentation Cables:
   1. Ground shield to ground bus at power supply for analog signal.
   2. Expose shield minimum 1 inch at termination to field instrument and apply heat shrink tube.
   3. Do not ground instrumentation cable shield at more than one point.
F. Equipment Grounding Conductors: Provide in all conduits containing power conductors and control circuits above 50 volts.
G. Ground Rods: Install full length with conductor connection at upper end.

3.14 CABLE TRAYS

A. Install in accordance with NEMA VE 1, section Application Information.
B. Install accessories as necessary for complete system.
C. Install in order that joints are not made at support brackets.
D. Install horizontal section support brackets between support point and quarter point of tray span.
E. Provide ceiling trapeze for horizontal cable tray.
F. Install support within 2 feet on each side of expansion joints and within 2 feet of fitting extremity.
G. Provide expansion joints in accordance with NEMA VE 1 for 25 degrees F maximum temperature variation.
H. Install horizontal tray level, plumb, straight, and true to line or grade within a tolerance of 1/8 inch in 10 feet and within a cumulative maximum of 1/2 inch.
I. Install vertical tray plumb within a tolerance of 1/8 inch in 10 feet.
J. Install without exposed raw edges.
K. Provide bonding jumper at each expansion joint and adjustable connection.
L. Ground Conductor: Provide properly sized clamps for each section, elbow, tee, cross, and reducer.

3.15 FIELD QUALITY CONTROL

A. Perform inspection and testing to verify that:
   1. Electrical equipment is operational within industry and manufacturer’s tolerances.
   2. Installation operates properly.
   3. Equipment is suitable for energization.
   4. Installation conforms to requirements of Contract Documents and NFPA 70.

B. Perform inspection and testing in accordance with industry standards, and manufacturer’s recommendations.

C. Adjust mechanisms and moving parts for free mechanical movement.
D. Adjust adjustable relays and sensors to correspond to operating conditions, or as recommended by manufacturer.
E. Verify nameplate data for conformance to Contract Documents.
F. Realign equipment not properly aligned and correct unlevelness.
G. Properly anchor electrical equipment found to be inadequately anchored.
H. Tighten accessible bolted connections, including wiring connections, with calibrated torque wrench to manufacturer’s recommendations, or as otherwise specified.
I. Clean contaminated surfaces with cleaning solvents as recommended by manufacturer.
J. Provide proper lubrication of applicable moving parts.
K. Investigate and repair or replace:
   1. Electrical items that fail tests.
   2. Active components not operating in accordance with manufacturer’s instructions.
   3. Damaged electrical equipment.
L. Electrical Enclosures:
   1. Remove foreign material and moisture from enclosure interior.
   2. Vacuum and wipe clean enclosure interior.
   3. Remove corrosion found on metal surfaces.
   4. Repair or replace, as determined by Engineer, door and panel sections having damaged surfaces.
   5. Replace missing or damaged hardware.
M. Test the following equipment and materials:
   1. Conductors: Insulation resistance, No. 4 and larger only.
   2. Panelboards, switches, and circuit breakers.
   3. Grounding electrodes.
N. Controls:
   1. Test control and signal wiring for proper termination and function.
   2. Test local control panels and other control devices for proper terminations, configuration and settings, and functions.
   3. Demonstrate proper operation of control, monitoring, and indication functions in presence of Owner and Engineer.
O. Balance electrical load between phases on panelboards after installation.
P. Voltage Testing:
   1. When installation is complete and facility is in operation, check voltage to Project.
2. Check voltage amplitude and balance between phases for loaded and unloaded conditions.

Q. Equipment Line Current:
   1. Check line current in each phase for each piece of equipment.

END OF SECTION
DIVISION 40
PROCESS INTERCONNECTIONS
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SECTION 40 05 51
VALVES - BASIC REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Valving, actuators, and valving appurtenances.

1.2 QUALITY ASSURANCE

A. Referenced Standards:
   1. American Society of Mechanical Engineers (ASME):
      a. B1.20.1, Pipe Threads, General Purpose.
      c. B16.18, Cast Copper Alloy Solder Joint Pressure Fittings.
   2. ASTM International (ASTM):
   3. American Water Works Association (AWWA):
      a. C207, Standard for Steel Pipe Flanges for Waterworks Service - Sizes 4 IN through 144 IN.
      d. C507, Standard for Ball Valves, 6 IN through 48 IN (150 MM through 1200 MM).
      g. C606, Standard for Grooved and Shouldered Joints.
   5. National Electrical Manufacturers Association (NEMA):
      a. 250, Enclosures for Electrical Equipment (1000 Volts Maximum).
      b. MG 1, Motors and Generators.
      a. 70, National Electrical Code (NEC).

1.3 DEFINITIONS

A. The following are definitions of abbreviations used in this Specification Section or one of the individual valve sections:
   1. CWP: Cold water working pressure.
   2. SWP: Steam working pressure.
   3. WOG: Water, oil, gas working pressure.
   4. WWP: Water working pressure.
   5. PTFE: Polytetrafluoroethylene.
   6. lbs: Pounds
1.4 SUBMITTALS

A. Shop Drawings:
   1. Product technical data including:
      a. Acknowledgement that products submitted meet requirements of standards referenced.
      b. Manufacturer's installation instructions.
      c. Valve pressure and temperature rating.
      d. Valve material of construction.
      e. Special linings.
      f. Valve dimensions and weight.
      g. Valve flow coefficient.
      h. Wiring and control diagrams for electric or cylinder actuators.
      i. Short Circuit Current Rating (SCCR) nameplate marking per NFPA 70. Include any required calculations.
   2. Test reports.

B. Contract Closeout Information:
   1. Operation and Maintenance Data:
      a. Provide Operation and Maintenance Manual as available by manufacturer.

C. Informational Submittals:
   1. Verification from valve actuator manufacturer that actuators have been installed properly, that all limit switches and position potentiometers have been properly adjusted, and that the valve actuator responds correctly to the valve position command.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Subject to compliance with the Contract Documents, refer to individual valve Specification Sections for acceptable manufacturers.

2.2 MATERIALS

A. Refer to individual valve Specification Sections.

2.3 BALL VALVES

A. Acceptable Manufacturers:
   1. Flow-Tek.
   2. Nibco.
   3. Or Equal.

B. Ball Valves – General:
   1. Connection:
      a. Flat faced ANSI 125/150 lb class flange.
   2. Materials (All Stainless Steel):
      a. Body: Three-part stainless steel, ASTM A351 CF8M.
      c. Seats: PTFE.
   3. Design Requirements:
      a. Rated for a minimum of 500 PSI CWP.
      b. Stem with blowout-proof design.
      c. Balancing stop for all applications.
   4. Operator:
      a. Provide operator extension as shown on Drawings.
         1) Solid steel extension with actuator key and nut.
         2) Diameter not less than stem of valve actuator shaft.
         3) Pin all extension connections.
      b. Operator shall be a lever with counterclockwise opening as viewed from the top.
c. Maximum pull of 80 lbs at the maximum pressure rating.

2.4 GATE ACTUATORS

A. Gate Actuators - General:
   1. Provide actuators as shown on Drawings or specified.
   2. Counterclockwise opening as viewed from the top.
   3. Direction of opening and the word OPEN to be cast in handwheel or valve bonnet.
   4. Size actuator to produce required torque with a maximum pull of 80 LB at the maximum pressure rating of the valve provided and withstand without damage a pull of 200 LB on handwheel or chainwheel or 300 FT-pounds torque on the operating nut.
   5. Unless otherwise specified, actuators for valves to be buried, submerged or installed in vaults or manholes shall be sealed to withstand at least 20 FT of submergence.
   6. Extension stem:
      a. Install where shown or specified.
      b. Solid steel with actuator key and nut, diameter not less than stem of valve actuator shaft.
      c. Pin all stem connections.
      d. Center in valve box or grating opening band with guide bushing.

B. Electric Actuators (480 V, 3 PH):
   1. Acceptable Manufacturers:
      a. Limitorque.
      b. Rotork.
      c. Or Equal.
   2. Electric Motor Actuators - General:
      a. Provide electric motor actuators for valves and gates so indicated: on the Drawings, in valve schedule in the Specifications, or elsewhere in the Contract Documents.
      b. Unless otherwise specified, provide each electric motor actuator with integral control devices for operation, including pushbuttons. When actuator’s integral control station would be 6 FT or more above the nearest operating floor, or when integral control station would be out of reach of facility personnel standing on the nearest operating floor: (1) integral control station on actuator is not required; and (2) provide remotely-located control station, with pushbuttons, in accordance with this Section.
   3. Furnish electric actuator integral with valve consisting of:
      a. Electric motor.
      b. Worm gear reduction.
      d. Absolute position encoder
      e. Electronic torque sensor
      f. Mechanically- and electrically-interlocked reversing motor contactor
      g. Limit and torque switches.
      h. Lubricants.
      i. Heating elements.
      j. Wiring.
      k. Terminals for motor power and controls.
      l. Drive nut.
   4. Housing/enclosure:
      a. Provide cast iron gear housing and cast iron load bearing enclosure.
      b. Non load bearing enclosure and housing: Aluminum or cast iron.
      c. Rated for area classification shown on Drawings.
      d. Provide O-ring seals for covers and entries.
      e. Terminal and limit switch compartment covers are to be fastened to gear housing by stainless steel fasteners with capture device to prevent loss.
      f. Coatings:
         1) Actuator shall be coated with a polymer powder coat suitable for an ASTM B117 salt spray test of 1,500 hours.
2) External fasteners shall be stainless steel or high-strength carbon steel that has been chromate-hexavalent coated, and then top coated with a high-strength, high-endurance polymer.

5. Motors:
   a. Provide motors that are totally enclosed, high torque design made expressly for valve actuator service and capable of operating the valve under full differential pressure for complete open-close and reverse cycle of travel at least twice in immediate succession without overheating.
   b. Design motors in accordance with NEMA MG 1 standards, with Class B insulation, and to operate successfully at any voltage within 10% above or below rated voltage.
   c. Provide positive method to ensure motor bearings are permanently lubricated.
   d. Provide three thermal switches imbedded in windings:
      1) 120 DEG apart.
   e. Motor housing:
      1) Aluminum or cast iron.
      2) Totally enclosed nonventilated with cooling fins.
   f. Provide motor capable of operating in any position.
   g. Provide motor sealed from gearcase to allow any mounting position.
   h. Provide motors suitable for 480 V, 3 PH, 60 Hz.

6. Gearing:
   a. Provide power gearing consisting of heat treated steel helical gears, carburized and hardened alloy steel worm, and alloy bronze worm gear, all grease or oil bath lubricated, designed for 100% overload, and effectively sealed against entrance of foreign matter.
   b. Provide gearing mechanism constructed to permit field changes of reduction gear ratio.
   c. Design actuators so that motor comes up to speed before stem load is encountered in either opening or closing operation.
   d. Limit switch gearings and feedback device reduction gearing:
      1) Steel or bronze.
   e. Support rotating shafts with anti-friction bearings.
   f. Provide separate drive nut/thrust bearing assembly:
      1) Mounted to base of actuator.
      2) High tensile bronze.
      3) Quarter turn actuator: Provide 90 DEG mounting intervals.
      4) Provide grease fitting on drive assembly.

7. Handwheel:
   b. Positive declutch mechanism to engage and disengage handwheel.
   c. Handwheel shall not rotate during motor operation.
   d. Inoperable motor shall not prevent manual operation.

8. Limit torque and thrust loads in both closing and opening directions by torque limit switches.
   a. Provide torque switches with micrometer adjustment and reference setting indicator.
      1) Assure adjustment variation of approximately 40% in torque setting.
   b. Provide switches having rating of not less than 6 A at 120 VAC and 2.2 A at 115 VDC.
   c. Limit and torque switches shall have totally sealed contacts.

9. Furnish electric actuator with two geared limit switch assemblies with each switch assembly having four separate limit switches:
   a. Assure each limit switch assembly is geared to driving mechanism and is independently adjustable to trip at any point at and between the fully open and fully closed valve position.
   b. Provide minimum of two normally open contacts and two normally closed contacts at each end of valve travel.
   c. Provide switches with inductive contact rating of not less than 6 A at 120 VAC, 3 A at 240 VAC, 1.5 A at 480 VAC, 2.2 A at 115 VDC and 1.1 A at 230 VDC.
10. Provide space heating elements sized to prevent condensation in both motor and geared limit switch compartment(s).
   a. Furnish heating elements rated at 120 VAC with heaters continuously energized.

11. Open-close actuator controls:
   a. Provide control assembly with necessary holding relays, reversing starter, control transformers of sufficient capacity to provide control power, space heating element power and valve position transmitter.
   b. Provide control assembly in an enclosure rated for the defined area classification.
   c. Controls for open/close actuator:
      1) Provide remote pushbutton station with enclosure rated for area classification shown on Drawings with:
         a) Open pushbutton.
         b) Close pushbutton.
         c) Stop pushbutton.
         d) Remote/local switch.
         e) Full open light.
         f) Full close light.
         g) Open and close relays as required.
      2) Provide control enclosure to accept:
         a) Remote open/close switches.
      3) Provide contacts in control enclosure:
         a) Remote/local contact.
         b) Full open contact.
         c) Full close contact.
      4) Wire all components to an internal terminal strip and include mounted wiring diagram inside enclosure.

12. Additional requirements for modulating valve actuators:
   a. Proportional position servo-amplifier mounted integral with the actuator control compartment.
   b. Positioning of valve shall be proportional to a 4-20 mA signal input to the position servo-amplifier when remote control has been selected.
   c. Servo-amplifier adjustments shall include zero, span, gain, and dead-band.
   d. Provide 4-20 mA signal position control as shown on the Drawings that interfaces with the position control/position feedback instrumentation wiring to and from remote control device.

13. Provide equipment or control panels with Short Circuit Current Rating (SCCR) labeling as required by NFPA 70 and other applicable codes.

C. Valve Lockout Devices:
   1. Device manufactured from same material as valve operator, preventing access to valve operator, to accept lock shackle.

2.5 FABRICATION

A. End Connections:
   1. Provide the type of end connections for valves as required in the Piping Schedules as shown on the Drawings.
   2. Comply with the following standards:
      b. Flanged: ASME B16.1, Class 125 unless otherwise noted or AWWA C207.
      c. Bell and spigot or mechanical (gland) type: AWWA/ANSI C111/A21.11.
      e. Grooved: Rigid joints per Table 5 of AWWA C606.

B. Refer to individual valve Specification Sections for specifications of each type of valve used on Project.
C. Nuts, Bolts, and Washers:
   1. Wetted or internal to be bronze or stainless steel.
      a. Exposed to be zinc or cadmium plated.

D. On Insulated Piping: Provide valves with extended stems to permit proper insulation application without interference from handle.

E. Epoxy Interior Coating: Provide epoxy interior coating for all ferrous surfaces in accordance with AWWA C550.

PART 3 - EXECUTION

3.1 INSTALLATION
A. Install products in accordance with manufacturer's instructions.
B. Support exposed valves and piping adjacent to valves independently to eliminate pipe loads being transferred to valve and valve loads being transferred to the piping.
C. For grooved coupling valves, install rigid type couplings or provide separate support to prevent rotation of valve from installed position.
D. Install electric or cylinder actuators above or horizontally adjacent to valve and gear box to optimize access to controls and external handwheel.
E. For threaded valves, provide union on one side within 2 FT of valve to allow valve removal.
F. Install valves accessible for operation, inspection, and maintenance.

3.2 ADJUSTMENT
A. Adjust valves, actuators and appurtenant equipment to comply with Section 01 75 00.
   1. Operate valve, open and close at system pressures.
B. For all 480 VAC electric actuators, employ and pay for services of valve actuator manufacturer's field service representative to:
   1. Inspect valve actuators covered by this Specification Section.
   2. Supervise adjustments and installation checks:
      a. Open and close valves electrically under local manual and demonstrate that all limit switches are properly adjusted and that switch contacts are functioning properly by verifying the inputs are received at the remote input/output (RIO) panels or local control panel as appropriate.
      b. Position modulating valves electrically under local manual control and demonstrate that the valve position feedback potentiometer is properly adjusted and that the feedback signal is received at the RIO panels or local control panel as appropriate.
      c. Simulate a valve position command signal at the RIO panel or local control panel as appropriate and demonstrate that the valve is controlled to the desired position without excessive hunting.
   3. Provide Owner with a written statement that the valve actuator manufacturer has verified that the actuators have been installed properly, that all limit switches and position potentiometers have been properly adjusted and that the valve actuator responds correctly to the valve position command.

END OF SECTION